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A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 1. LONDON: JANUARY 7, 1898. EVERY FRIDAY. PRICE SIXPENCE.

THE INVENTION OF THE Papermaking Machine.

THE ENGLISH SIDE OF THE STORY: DIDOT, GAMBLE, DONKIN, and the FOURDRINIERS.

Concluded.

The Government grant referred to in our last article relieved some of the immediate necessities of Henry and Sealy Fourdrinier, but more was still wanted, as of course nothing was forthcoming for them out of the proceeds of their old business. Since the smash certain sums had been received by them and their assignees, leaving the total loss on the balance of the books of the patentees on account of the machine, up to the expiration of the patent in 1822, at £51,865 12s. 10d., without any interest being calculated thereon after 1823, this being over and above the loss they sustained by not carrying on their wholesale business as stationers. So in 1847 the *Times* took up the case on behalf of Henry (Sealy was then dead), and devoted a lengthy leader to a record of some of his sufferings and wrongs. "The name of Henry Fourdrinier," it said, "ought to be familiar to all those engaged in any department of letters. His day indeed is past, and probably by many forgotten, for thirty years and more have elapsed since his star was in the ascendant."

The writer concluded with a stirring appeal to the generosity of the public on the aged inventor's behalf. It was not altogether in vain, as sufficient was raised amongst members of the trade to purchase annuities for Henry and his daughters. Sealy, who died in 1847 at the age of 70, though he had part of the Government grant, did not live long enough to participate in the subscription. Though over 81 years of age, Henry lived seven years more in the enjoyment of his annuity, and most probably in complete retirement from all active work. Then on September 3rd, 1851, at his little home near Rugeley, the old man passed at last to his rest at the age of 89. He died at the "Old Rectory," Mavesyn Ridware, where he had for some time past been residing. The then rector was an old friend of his, and the house (still existing, and described to us as "a very poor affair") had been exchanged a few years earlier by a former incumbent, for the present rectory at Hill Ridware. The place is quite close to the church, which Henry attended. Some of the older inhabitants of the parish remember him, either personally or by hearsay, and he is spoken of locally as "a very nice old gentleman," but poor, and as one who "never showed in any way that he was well off." He left four sons and two daughters, all of whom were then pretty well on in middle age. His sons were, in order of age, Joseph, Charles John, George Henry, and Edward Newman, the two latter being engaged in the papermaking business at Hanley. Regular weekly remittances are said to have come from these, and possibly formed one of the chief sources of support for himself and daughters, apart from the annuities. The daughters, Harriet Elizabeth and Mary Anne Sarah, both died unmarried; the former had some repute at the time as a

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writer of magazine stories, which frequently appeared in the columns of the *Family Herald* and other periodicals.

Henry Fourdrinier was interred in the family vault in the parish churchyard of Stone, Staffordshire, where also his wife is buried. She was a Miss Sarah Anne Walker, of Walworth (presumably some connection of a former partner of Henry's father in Lombard-street), and the wedding took place on December 6th, 1790, at the Parish Church of Newington, Surrey. Her father was reputed to be a very wealthy man, and to have dowered his daughter handsomely. Most of her private means, however, seem, like her husband's, to have been swallowed up in the bottomless pit of invention. In 1840, whilst residing in Staffordshire, Henry celebrated, in as good a style as his then circumstances would permit, his golden wedding. A number of medals were struck in honour of the occasion, and some of these still remain in the possession of members of the family.

With the death of Mr. Henry Fourdrinier, a notable chapter in the history of invention came to a close. The inscription on his monument in Stone Churchyard, a sketch of which we give, is however silent on this point It reads :—

To
THE REVERED MEMORY OF
HENRY FOURDRINIER,
FORMERLY OF BURSTON HALL,
WHO DEPARTED THIS LIFE
ON 3RD SEPTEMBER, 1854,
IN THE 89TH YEAR OF HIS AGE.

"The hoary head is a crown of glory if it be found in the way of Righteousness."

The entry in the burials register of the Parish is equally brief and colourless, and is as follows :—

	ABODE.	WHEN BURIED.	AGE.	OFFICIATING MINISTER.
Henry Fourdrinier	Mavesyn Ridware	September 8th.	88*	J. Ford.

* This was of course his age on his last preceding birthday.

His brother Sealy, as we have seen, had preceded him to the grave, and Robert—to whom in a measure he owed both his fame and his misfortunes—had been dead more than 26 years. After the decease* of this, the last survivor of the unfortunate five who gave the papermaking machine to the world, history repeated itself in the manner usual in such cases, a further tardy subscription being set on foot to provide for the future necessities of his daughters, who, like himself, were in rather humble case. Thus did humanity attempt to discharge some small portion of the debt it owed to a great, but, as the *Times* said, a forgotten man, who had benefited the world of letters to an almost incalculable degree.*

It may be of interest, in this place, to print a few notes on the Fourdrinier family, several bygone members of which attained some notoriety in their day, quite apart from the invention with which the name is so prominently associated. The Rev. Dr. F. G. Lee, Vicar of All Saints, Lambeth, has in his possession a lengthy pedigree of the Fourdriniers, to whom he was allied by marriage, his late wife having been, through her mother, a second cousin to Henry and Sealy. Though not entered in the College of Arms, this may be regarded as on the whole authentic, and we are indebted to the rev. gentleman for some interesting extracts from it. About 1575 there was born at Caen, in Normandy, Henri Fourdrinier, who became an Admiral of France. His son, of the same names, and also born at Caen, was one of the persons proscribed by Louis XVI.'s act for the Revocation of the Edict of Nantes, and like many thousands of his Huguenot compatriots he had to quit French soil. Groningen, in North-east Holland, was his ultimate refuge, and here on December 20, 1698, Paul Fourdrinier was born. As religious troubles still pursued the family, he came to England, and on October 5, 1721, married one Susannah, daughter of Louis Grolleau, another refugee, who had been naturalised on March 8, 1682. From this marriage sprang Henry Fourdrinier the third, father of the inventors, who was born in London, February 25, 1730. Paul was an engraver of note, whose productions still command a market amongst collectors and —needless to say—his descendants. He died early in 1758, and was interred in the Huguenot burial ground at Wandsworth (lately restored) on February 3 in that year. His wife survived him more than a dozen years, dying October 5, 1770; she also lies at Wandsworth. Their son, the third Henry, was mainly instrumental in building up the big paper business with which his family name has ever since been associated. He married a widow, Mrs. Jemima White, or Manning, who died September 5, 1781, at the age of 51, and was buried in the Parish Church of St. Mary Woolnoth, Lombard-street, where also several other members of the Fourdrinier family lie, a mural tablet† commemorating them. Her

* He seems to have died intestate, as searches we have instituted at the Probate Registries in both London and Lichfield have been unsuccessful in bringing a will to light. Indeed he had little, if any property to dispose of, and none of his relatives appear to have been a penny the better for his death.

* Curiously enough, the time of his decease was coincident with another considerable rise in the price of paper, which compelled such old-established organs as the *Maidstone Journal* to raise their price from 5d. to 6d. a copy.

† We are unable to furnish the inscription on this, the church being at present in the hands of the contractors for the City and West End Electric Railway.

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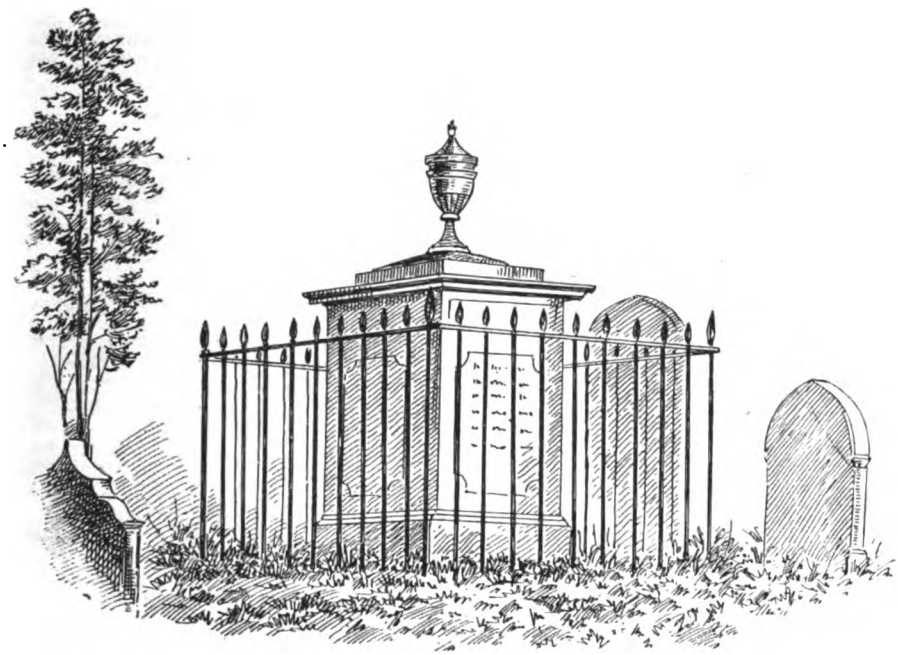
husband long outlived her, not dying until January 11th, 1799, at which date (as mentioned in our first article) Henry and his other sons succeeded to his share of the business. The first-named, as the eldest, would naturally have the controlling voice in most matters, which fact no doubt accounts for the determination with which he carried on the experiments with the paper machine, in spite of the warnings of one of his partners (Mr. Bloxam) and his own sense—it could hardly have been absent—of the manner in which his actions tended to wreck the business. Charles was probably of a more cautious temperament than his brothers, and does not seem to have taken any part in the engineering speculation. To this, no doubt, he owed his position in the firm when it was reconstructed subsequent to the bankruptcy. Sealy, the fourth son, however, was either induced or voluntarily agreed to go shares with his brother Henry in exploiting Gamble's patented machine, and thus also "went shares" in his resulting ruin. What occurred between them after the break-up of 1810 may possibly never be known, but it is regarded as almost certain that a feud of some kind sprung up, they drifted apart, their respective descendants did the same, and not until quite recently have these two branches of the family resumed friendly relations. Perhaps Sealy thought that Henry, as the elder and richer brother, should not have led him into the meshes of such a disastrous speculation.

Of Henry's descendants several are now living. One, Henry Richard, a retired Bank of England official, resides at Birmingham; he is a son of Henry's second boy, Charles. A daughter of Joseph (Henry's eldest son), has a fine portrait group of the family as existing about a century or more ago.* Mr. Douglas Fourdrinier, well known as the publisher of our contemporary, the *Builder*, is a grandson of Henry through his youngest son, Edward Newman, already referred to. He was born in 1842, married about 1887, and has two sons to carry on the succession. George (Henry's third son) had a large family, several of whom died young, whilst others never married. His eldest son (Henry John) married twice, but have no family. He had another son (Francis Egerton), who left no male issue. Both settled in Canada, where they died. A third son (Samuel Harding) resides in Yorkshire, and has one son; and the youngest (Charles William—unmarried) lives in the States, but visits England occasionally. Five of George's daughters married respectively Septimus Bourne, Esq., mining engineer, of Workington; T. C. Brown-Westhead, Esq., of Cauldon-place, Stoke-on-Trent; W. H. Folker, Esq., M.D., of Hanley; W. J. Dixon, Esq., of Chester; and Major Stevenson, late Royal Irish Regiment. Of these only two are still alive. The oldest living represen-



HENRY FOURDRINIER'S MONUMENT IN THE PARISH CHURCHYARD AT STONE.
(From an Original Sketch).

*There is a small oil painting of Henry Fourdrinier (copied from the original in the possession of Douglas) in the machinery section at South Kensington, close by the models of papermaking plant

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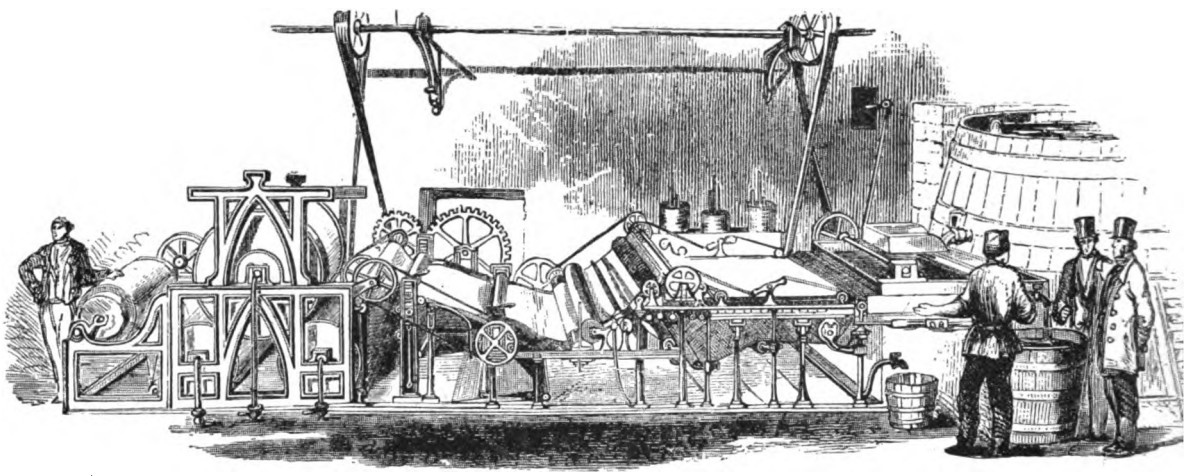
tative of the family is a lady now residing at Ramsgate in her 85th year, a daughter of Charles Fourdrinier, who has survived both her brother, John Coles Fourdrinier, and his son Paul. James Sealy Fourdrinier, a son of the first Sealy (who married a Miss Harriet Pownall, of Winslow, Cheshire) was for many years secretary to the original Electric Telegraph Co. He left no male issue.

We propose to conclude this series of articles by some remarks upon the changes effected in the papermaking and paper using industries, owing to the general adoption of machinery in paper manufacture.

It was just nine years before Henry Fourdrinier's death when the number of paper machines in use in England overtopped, for the first time in the history of the industry, the number of vats, but the very next year the number of the latter went up from 309 to 328, whilst the machines decreased from 310 to 308. Two years later (1848) they were level once more, 321 of each, and ever since the balance has been in favour of machinery. In 1851, the year of the Great Exhibition, there were in England 322 papermaking machines and 296 vats, in Scotland (machines were from an early period vastly in the ascendant there) 58 machines and 19 vats, and in Ireland 33 machines and 15 vats. Early in the following year there were in the kingdom 380 (England 304, Scotland 48, and Ireland 28) or, according to the Inland Revenue returns, 415 paper mills. The amount of paper made in Great Britain in 1850, and on which duty was paid, was nearly 63,000 tons. In 1800, before any machines had been set to work, the paper duty only amounted to £193,533; seven years later it had considerably more than doubled, and was up to £424,666; twenty-one years later (1821) it had increased to £579,867, and in 1835 to £833,822, seven-eighths of which, perhaps, was paid on machine-made paper. An increase would no doubt have occurred in any case, but not to such an enormous degree without the stimulus of machinery. To such importance had the industry attained in half-a-century from the birth of Robert's invention. The degree of perfection at which the machine had arrived at about the period of its chief inventor's death, will be gathered from the illustration we give of an "endless paper machine." This was published in 1857, just fifty years after the first improved machine had been placed on the market. Even then it was still a comparatively small affair, probably not more than about 40 feet in length, including the vat.

The invention of the papermaking machine came as the right thing at the right time; previously, and from at least the thirteenth century, paper manufacture had been carried on by hand, probably in much the same manner all along.* The advent of the machine revolutionised all this, in the same way as the advent of the cylinder and the steam press revolutionised printing, which had been practised in a fashion almost unchanged from its birth in the middle of the fifteenth century. The year which saw Gamble's first patent taken out also saw the first iron Stanhope printing press at work, and although this was only a moderate improvement, still it was sufficient to show that the trade was ripe for fresh developments, when



ENDLESS PAPERMAKING MACHINE, 1857.

* Various attempts had been made to replace manual by mechanical labour; some having tried to substitute a machine for the vatmen, and others for the couchers. In France, M. Montgolfier contrived three figures in wood, to do the work of the vatman, the coucher, and the layer. He certainly did make a few reams of paper, but the operation was slow, and it still required to be pressed by manual power. On the machine being in the least obstructed (which inevitably happened) the perfect exactness which it was necessary should exist in the action of the automata was destroyed, and the whole fabric subject to breakdown. After persevering for six months, and incurring a considerable expense, this ingenious man was at last obliged to abandon his scheme. In England the son of a paper manufacturer constructed a machine to do the coucher's work, but, having performed this operation on eight or ten sheets, the mechanism was no longer fit for use.

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the progress of invention in paper manufacture should make them possible. The old, slow and cumbrous process of making single sheets of paper by hand* marched for centuries side by side with the equally slow and cumbrous process of printing on those sheets by means of a hand-press. The enormous increase in the production of paper, following upon the introduction of machinery into the mills, called for an improved means of utilising that product. Many inventors essayed to fill this want, but to Frederick Koenig, in 1812, the invention of the cylinder printing machine is chiefly due. In 1814, by which period perhaps a dozen paper machines were at work in England, the *Times* was first produced by steam power. The use of the latter at once made it possible to utilise, economically and speedily, the large quantities of paper which were being daily turned out of the machine-fitted paper mills of the country. The vat was promptly replaced by the Fourdrinier mechanical papermaking apparatus, at the same time that the old hand press of Gutenberg and his successors had to give way to the cylinder machine, which, in its turn, has since been partly superseded by the giant web rotaries of the present day. The idea that the invention of the printing machine was consequent upon the introduction of the papermaking machine is generally scouted at the present day and is, in fact, contradicted by facts, for some of the earliest practical experiments in the direction of a cylinder printing press, such as Nicholson's in 1790, ante-date Roberts' first essays towards the production of a continuous paper machine. Still, at the commencement of the present reign many prominent men in the printing industry (including such authorities as George Clowes and Luke G. Hansard) were distinctly of opinion that it would have been impossible for the printing machine to have made such progress as it had then done, without the facilities afforded to users in the larger sheets of paper that were available through the genius of the Fourdriniers and their associates. In 1837 hand-made paper had practically ceased to be used in printed books, and even for some time prior to that very little of any kind was made use of in book work except Whatman's. He and some few other makers, of course, had an established reputation, and it was generally asserted that the mere presence of, for instance, Dickinson's name on a parcel of paper would make it fetch a better price. The Hertfordshire mills were at that time particularly noted for the production of copperplate paper. Nearly the whole of this material formerly used was imported from abroad (France chiefly), but was afterwards made in the English county just specified.

So far as the employment of labour was concerned it was estimated in France early in the present century—and the statement probably held good elsewhere—that to every paper machine employed sixty persons were needed in a mill, to each vat only ten, so that even whilst his words were being penned, the guide book writer's notion (see *ante*) that the introduction of the machine led to a lessened demand for hand labour (it was even imagined that in a few years this would be entirely done away with) must have been almost wholly fallacious. Whilst we are on the question of labour it will be worth while to devote a little space to the chronicling of a fact perhaps not generally known nowadays, viz., the important influence which labour exercised on the old vat process. We are often accustomed to look upon the trade union movement as a thing of recent growth, but there is plenty of evidence to prove that a hundred years ago, in the papermaking industry, labour was an even more potent factor than capital. So far as the masters were concerned it seemed to be generally admitted, *when* it was seen that the paper machine had come to stay, that withone or two exceptions, which still existed where a monopoly had perpetrated itself, the new system had brought about such an equality in the general state of the trade as was highly in favour of the manufacturers with small means. On the other hand the wages paid in general by the trade were lower than before. Prior to the introduction of machinery a large proportion of the paper mill employes in the country belonged to a sort of club or union, which was a very powerful organisation, so much so that it was said that in those mills where union men were employed *they* were the masters and not the proprietors. These men always opposed the making of large sheets of paper as it was an advantage to them to make the small size, and they considered that if they made two small sizes in a large size, though they might not perhaps have double wages, they had a right to a certain benefit conferred on them for that reason; therefore, though a considerable quantity *was* made of the double size, yet it was not to that full advantage which the public derived from manufacturing it by machines. Every two or three years the union men "turned out" (*i.e.*, struck work), and on one occasion the English mills were silent for 11 months owing to this combination on the part of the workmen! As the vat process of papermaking required skilled labour, and the men employed at it had to serve a long term of apprenticeship*, recourse could not be had by the masters to what we have now learned to call "free" labour, and thus in the event of a strike the mills had generally to shut down until the men chose to go in again. The machine system changed all this, as in place of a large number of skilled workmen at the vats only a half dozen or so men of ordinary intelligence were required to tend the machines, a job which a few weeks

* One Thomas Cobb, junior, tried to improve this process, and accordingly took out in 1807 a patent for "certain improvements in the art of making paper in separate sheets," and another in 1812 for "certain further improvements" in the same.

* In an old apprenticeship indenture, dated at St. Neots on November 2nd, 1810, we find it stated that the apprentice was to serve seven years in the paper mill in that town (then worked by Gamble) at the following wages: for the first and second years 10s. per week, the third year 11s, the fourth year 12s., the fifth year 13s., the sixth year 14s., and the seventh and last year 15s.

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[illegible]

... such arbitrary power could be exercised a century since by a mere combination of workmen in a single industry, at a time, too, when organisations for the betterment of labour were so sternly discountenanced by the law. In the face of such a state of things, it is easy to understand how eager the paper manufacturers of the country must have been to take advantage, by fair means or foul, of an invention which promised to permanently emancipate them from the rule of their workmen and reinstate them in that position of authority from which they had been so long ousted by the machinations of the terrible "club."

[illegible] again from men to machines, we [illegible] up with a few recent statistics [illegible] the paper trade of the kingdom. In [illegible] there were in the U.K. about [illegible] [illegible] as follows: England 272 [illegible]

[illegible]

[illegible]

In conclusion we have to thank the [illegible] gentlemen on both sides of the Channel who have so kindly undertaken to answer our enquiries and to make researches on our behalf, trivial as the former and troublesome though the latter must often have been. We felt, however, that if the subject was worth treating at all it was worth doing as well as in us lay, more especially as the history we have endeavoured to tell does not appear to have been previously told in any connected form, or in such full detail. Our wish was to rescue great names (for so they truly are to our industry) from obscurity and the limbo of forgetfulness, and to show the various transactions in their proper light. Whether we have succeeded in doing so must be left to the judgment of our readers and the trade. What has been done could probably not have been done so fully had it not been for the assistance—amongst others—of the following:—Mr. Bryan Donkin, Messrs. Darblay pere and fils, of Essonnes, the Rev. F. de Lacy White, rector of Mavesyn Ridware, Staffs., Mr. J. Harcourt Browne, the present occupant of Two Waters Mill, Messrs. Brittains, Ltd., Hanley, Mr. Douglas Fourdrinier, of the "Builder," the Rev. Dr. F. G. Lee, of Lambeth, Mr. Joseph Wright, of St. Neots, and the Rev. A. E. Brisco Owen, Rector of Stone (to whom we are indebted for the sketch of Henry Fourdrinier's monument), all of whom have supplied us with many useful and valuable notes.

[illegible] Gamble.—As the result of some enquiries made on th[illegible], it appears that when Gamble left St. Neots in [illegible] to make way for Matthew Towgood, he went to [illegible] Norfolk, where an old friend of his, a Mr Dusetoy, was then working the [illegible] paper mill, which had been established about [illegible] by William Holmes. Subsequently he is said to have gone to London and embarked in the stationery trade. We have endeavoured, but with no success, to verify this statement by searching the London Directories for the [illegible] [illegible]. His name does not appear among the G's [illegible] [illegible] Directories of [illegible] [illegible] [illegible]

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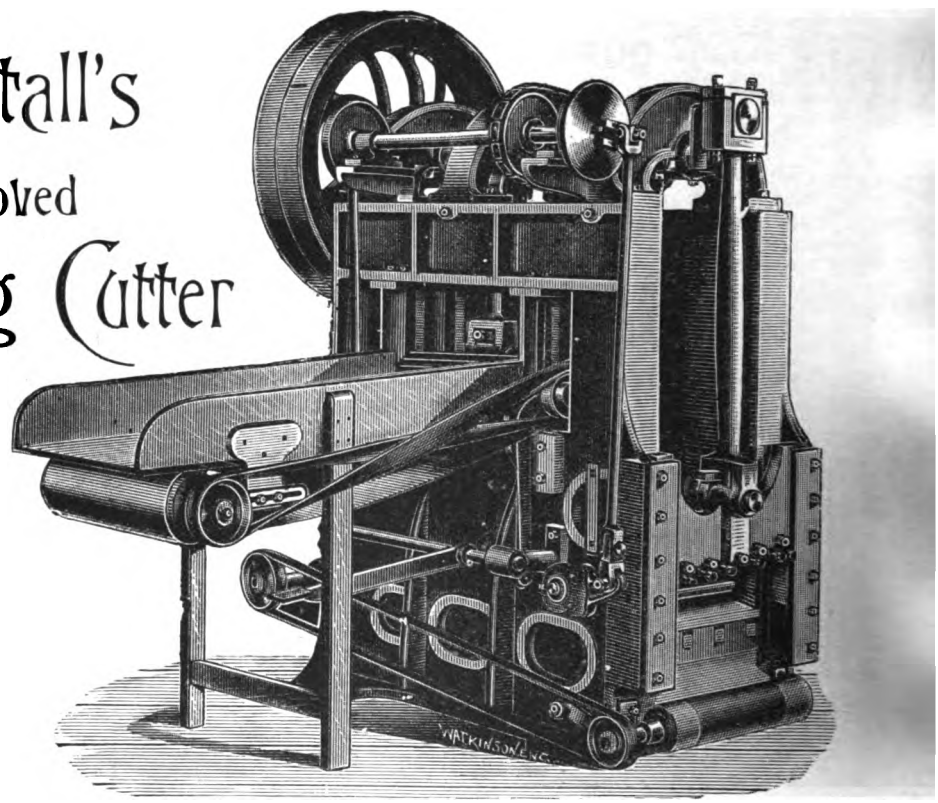
Nuttall's Improved Rag Cutter



This Machine has now been Greatly Strengthened and Simplified, and its Output Capacity Increased. It is Equally Effective upon the Strongest and Lightest Materials, and will Cut Every Class of Stock.

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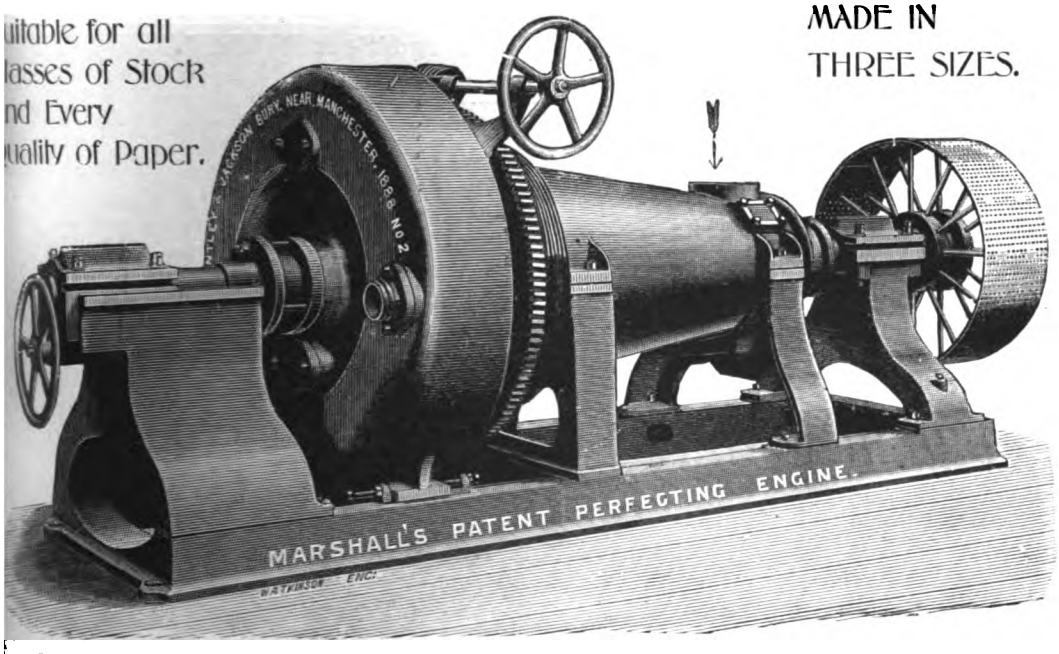
JACKSON
LIMITED.

Engineers,
MANCHESTER.

Marshall's Patent Perfecting Engine

Suitable for all Classes of Stock and Every Quality of Paper.

MADE IN THREE SIZES.



This Engine will produce a Better Finished, Stronger, and More Even Sheet of Paper from the same Materials than can be produced by any other Mechanical Process, and at the same time will REDUCE the TIME and POWER Required for Beating.

COBURN-TAYLOR Machine.

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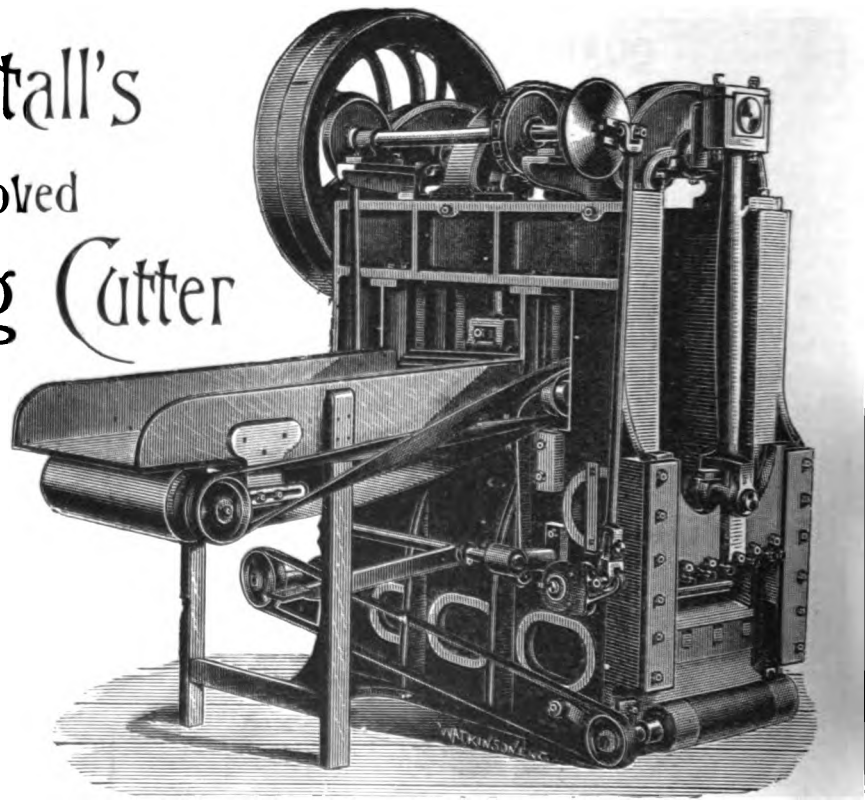
Nuttall's Improved Rag Cutter



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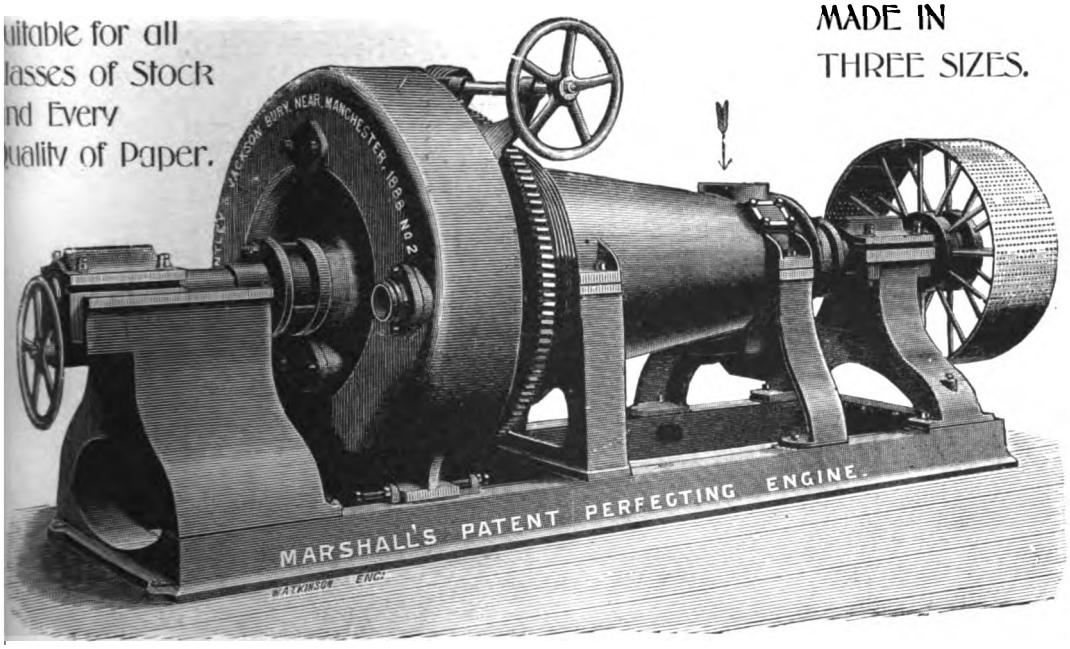

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THE

UNITED WIRE WORKS

LIMITED.

Manufacturers of

Paper Machine Wires

(up to 174 inches wide)

Plain Phosphor Bronze, Platine, Electro and Special Metal.

Presse Pate Wires,

Plain, Twisted, Tinned Twisted, and Phosphor Bronze.

Dandy Rolls,

Laid, Wove and Spiral with Watermarking.

Brass, Copper, Steel & Iron Wire Cloth,

All Sizes, Meshes and Gauges.

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GREAT EASTERN WIRE WORKS, GLASGOW.

TRAFALGAR WIRE WORKS, NEWCASTLE-ON-TYNE.

Registered Office:

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AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
10 cases	Antwerp	Devoe & Reynolds	New York
6 ,,	,,	Kupfer Bros	,,
4 ,,	,,	Hensel, Bruckmann	,,
1 ,,	,,	Loeb and Schoenfeld	,,
14 ,,	,,	Bainbridge and Co	,,
21 ,,	,,	J. W. Hampton	,,
6 ,,	,,	L. C. Wagner	,,
15 ,,	,,	A. V. Benoit	,,
5 ,,	,,	Stiner and Co	,,
30 ,,	,,	Scovill and Adams	,,
21 ,,	,,	Knauth, Nachod & Co	,,
14 ,,	,,	Sheldon and Co	,,
1 bales	Bremen	Hensel, Bruckmann	,,
5 cases	Bristol	Bainbridge and Co	,,
3 ,,	,,	E. Kimpton	,,
1 ,,	Hambro	Anthony and Co	,,
8 ,,	,,	Stone and Co	,,
63 ,,	,,	Hardt and Lindgens	,,
40 ,,	Havre	American Tobacco Co	,,
4 ,,	,,	W. H. Aldrich	,,
4 ,,	,,	E. C. Roberts	,,
3 ,,	,,	Richard and Co	,,
10 ,,	Hull	J. Hunter	,,
2 ,,	Liverpool	Baldwin Bros & Co	,,
4 ,,	,,	W. H. S. Lloyd	,,
395 pkgs.	Rotterdam	Hensel Bruckmann	,,
1 case	,,	Mercke and Co	,,
3 ,,	,,	C. Majert	,,
2 ,,	,,	De Jonge and Co	,,
20 ,,	Shanghai	Winter and Smillie	,,

CHEMICAL FIBRE.

15 tons	Hull	F. Bertuch and Co	New York

MANILLAS.

262 bales	Dundee	Jessup and Moore	New York
87 ,,	,,	Train, Smith and Co	,,
143 ,,	Liverpool	Butterworth and Co	Boston

RAGS.

253 bales	Bremen	Castle and Gotheil	New York
550 ,,	,,	Salomon and Co	,,
60 ,,	Dunkirk	A. Kazenstein	,,
60 ,,	Glasgow	W. F. Corne	Boston
47 ,,	,,	Dutton and Co	,,
85 ,,	Hamburg	A. Katzenstein	New York
26 ,,	,,	Salomon and Co	,,
79 ,,	Leghorn	Joseph and Co	,,
400 ,,	,,	Jessup and Moore	,,
130 ,,	,,	Castle and Gotheil	,,
167 ,,	,,	J. Pirnie	,,
9 ,,	London	Libmann and Co	,,
51 ,,	,,	Overton and Son	,,
32 ,,	,,	Jessup & Moore	,,
45 ,,	,,	Overton and Son	,,
375 ,,	Liverpool	Train, Smith & Co	Boston
14 ,,	,,	Schulz and Ruckgaber	,,
60 ,,	,,	W. F. Corne	,,
47 ,,	,,	Dutton and Co	,,
35 ,,	,,	E. P. True	,,
89 ,,	,,	Butterworth and Co	,,
140 ,,	Rotterdam	Train, Smith & Co	New York

BLEACHING POWDER.

121 cks.	Antwerp	F. A. Reichard	New York
80 ,,	,,	Fuerst Bros	,,
62 ,,	Bristol	J. L. & D. S. Riker	,,
119 ,,	Hamburg	To order	Philadelphia
287 ,,	Liverpool	J. L. & D. S. Riker	New York
15 ,,	,,	Halliday & Sons	,,
310 ,,	,,	J. L. & D. S. Riker	Boston

CAUSTIC SODA.

19 drums	Antwerp	Cohn and Brother	New York
250 ,,	,,	Hill's Son & Co	,,
18 cks.	Hamburg	Klipstein and Co	,,
275 drums	,,	J. L. and D. S. Riker	,,
90 ,,	,,	Crooks and Co	,,
225 ,,	,,	Hill's Son & Co	,,
200 ,,	Hull	,,	,,
200 ,,	London	,,	Philadelphia

SIZING.

Quantity	From	Importer	Port
76 bales	Liverpool	Groom and Co	Boston
32 ,,	,,	Schulz and Ruckgaber	,,
59 ,,	,,	Butterworth and Co	,,

SODA ASH.

102 cks.	Liverpool	Warren and Co	Boston
413 ,,	,,	Morey and Co	,,
480 ,,	,,	Wing and Evans	,,
120 ,,	,,	Linder and Meyer	,,
48 tcs.	,,	,,	,,

SODA CRYSTALS.

280 bdls.	Liverpool	Warren and Co	Boston

SULPHUR.

835 bgs.	Liverpool	Linder & Meyer	Philadelphia

JUTE.

37 bgs.	Glasgow	Bailey & Co	Philadelphia
37 rolls	,,	Potter Son and Co	,,

THE NEW ODER CANAL.—The locks at Breslau hitherto prevented through navigation from the paper, pulp and mining districts of Upper Silesia and Stettin, but by the cutting of this new canal, lately opened the passage of the goods through the city is altogether avoided, and vessels up to 400 tons can now pass without unloading. This will of course be of great advantage among others to the pulp and paper industry, cargoes of Upper Silesian sulphite will now be shipped of up to 400 tons direct from the port of Cosel in Upper Silesia to any British and American port. The traffic on the river Oder has been constantly going up. It was 21¼ million meter cwts. in 1887, and recently amounted already to 85¼ million meter cwts. Hitherto vessels had to go through locks at Breslau and the size could not exceed 175 tons burden. The harbour accommodation at Cosel is at present still insufficient for the increasing traffic, and there is also an additional smaller canal wanted to connect Cosel with the principal mines, from where at present the traffic must go by rail to Cosel. But, even as it is, the exportation of coal alone last year came to nearly five million meter cwts.

THE Hungarian Government, in inviting foreign manufacturers to erect works in Hungary—offering them exemption from taxation, low carriage on the State railways, &c.—is no doubt doing everything in its power to encourage the industries of the country. Foreign manufacturers, however, ought to make sure before embarking upon such an enterprise that the Government is not too sanguine in giving artificial help to industries. It is possible that there is not a sufficiently advanced natural consumption in the country.

TANGIER.—An official report on the trade of Tangier states that the paper imported in wholesale quantities comes from Germany almost exclusively, and consists of two kinds, the one a very common brown paper, size 15-in. by 11¼-in., used for wrapping small parcels of groceries, etc., and the other a white paper, sheets 18¼ by 14¼-in., for writing purposes. The former costs about 2¼d. per kilo, free in a Moorish port, and the latter about 5d. per kilo. Smaller quantities of this writing paper in superior qualities are also imported.

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THOS. HARDMAN & SONS

ESTABLISHED · 1836 ·

Limited.

FERNHILL MILLS

BURY, LANCASHIRE.

MANUFACTURERS OF

FELTS FOR PAPER MAKERS.

SPECIALITIES

WET·AND·DRY·FELTS,

COUCH ROLL COVERS,

Second Press Felts,

BAG FLANNELS,

BLANKETS, LAPPINGS &C.

· FOR · PAPER · STAINERS ·

Also · Makers · of · every · Description · of · Cloths · used · for · Machinery · Purposes.

TELEPHONE No 41 ✱ TELEGRAMS. HARDMAN, FERNHILL, BURY.

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Big Failure in America.

The Affairs of Colonel Wm. Singerly.

The decline in the value of stocks and bonds of Col. Singerly's pulp and paper company of Elkton Md., is said to be the reason of the closing of Chestnut-street (Philadelphia) National Bank and the suspension of payment in connection with the Chestnut-street Savings Fund Co.

The stocks and bonds of the paper and pulp concern were accepted as security for money advanced by the bank when the product of the mills sold at 10 cents a pound.

Col. Wm. Singerly is the president of both the bank and savings fund company, and is the proprietor of the Philadelphia *Record*. He is also connected with a large number of enterprises.

No statement of the liabilities or assets has been made yet, but it is reported that the bank owes in the neighbourhood of 3,000,000 dols.

Lancashire Paper Trade.

The *Darwen News*, in its review of local trade, says the year that has just closed, taken as a whole, has been one of the most successful in the annals of the Lancashire paper trade, and, generally speaking, good dividends have been earned. Up to within the last two months all the mills have been exceptionally busy, and their productive power has been taxed to the utmost to keep pace with the demands that have been made upon them. This has stimulated a desire for increased output, and we are assured that the production of the local mills this year will be the largest on record.

During the last two months, however, owing to this increased production, and the very large importation of American and Scandinavian paper, principally "news," the supply seems to have overtaken the demand, and prices are somewhat easier in spite of the increased cost of production, owing to the serious advance in the price of materials. Now that the English mills are laying themselves out to meet the requirements of the trade, we shall no doubt see a diminution of imports of foreign paper, especially as the trade in the United States is improving from the deplorable condition it has been in for so long, and exports that have resulted in absolute loss will no doubt be discontinued.

The total out-turn of the mills within a radius of five miles of Darwen is upwards of 1,500 tons weekly, from which it will be gathered that the industry is a very important one, and its interests should be guarded by the local and county authorities as far as possible. The constant interference of the Ribble Joint Committee has been very harassing to some of our manufacturers. Now that an honest attempt is being made to free the streams from "solids in suspension," the committee should be satisfied, and cease worrying the trade to attempt the accomplishment of the impossible feat of completely dealing with "solids in solution" which can have no appreciable effect on the state of the river.

The brown section of the trade has had a fairly prosperous year, but there does not appear to have been any increase of production in this branch, but the usual plant has been very fully employed.

Darwen has long held an enviable position, in that it is the seat of the paper-staining trade, a trade which has developed to such a very large extent both as regards the amount of wall-paper turned out and the artistic merit of the productions. For years past this trade has been in a very flourishing condition, and according to all accounts the past year has been up to the mark so far as the two local firms, Messrs. C. and J. G. Potter and the Darwen Paper-staining Co., are concerned. At these mills some 750 hands are engaged, and the ordinary production from the 42 printing machines in use has been considerably augmented, inasmuch as overtime has frequently had to be worked. The firm of Messrs. C. and J. G. Potter have during the year rebuilt the older portion of Belgrave Mill with advantage, and the whole now forms a finely-equipped paper-staining works. During the year the manufacture of waterproof wall-papers and waterproof paper has been carried on at Orchard Mill, the spinning department of which has been altered to put to this use, and orders for paper treated in this fashion have been numerous.

Although one of the trades most recently introduced into Darwen, the manufacture of anaglypta at the works at the Hollins is an important branch of industry. Each year since coming to Darwen the firm have had to report an extension owing to increased business, and the same is the report this year. The deeply embossed panels, and the chaste designs capable of being picked out in delicate artistic tints render the anaglypta an artistic and permanent wall decoration, whilst its practical utility is considerably increased owing to its lightness, thus gaining an advantage over other embossed decorations. The firm have had a good stock of orders, and are well in hand for the coming year. The Jubilee shield which they produced for decorative purposes during the June festivities met with remarkable success, and for some time the run on this species of article rendered the works at Darwen exceedingly busy. As the years pass by, and the worth of this comparatively new decoration becomes the wider known, the works at the Hollins will continue in that development which has been a distinctive feature since its advent in Darwen.

MR. M. G. SKRAMNES, of 143, Queen Victoria-street, E.C., has sent us a monthly tear-off sheet calendar for 1898. It is suitable for either wall or desk use.

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JAMES MILNE & SON, LIMITED

Papermakers' Engineers.

MILTON HOUSE WORKS EDINBURGH.

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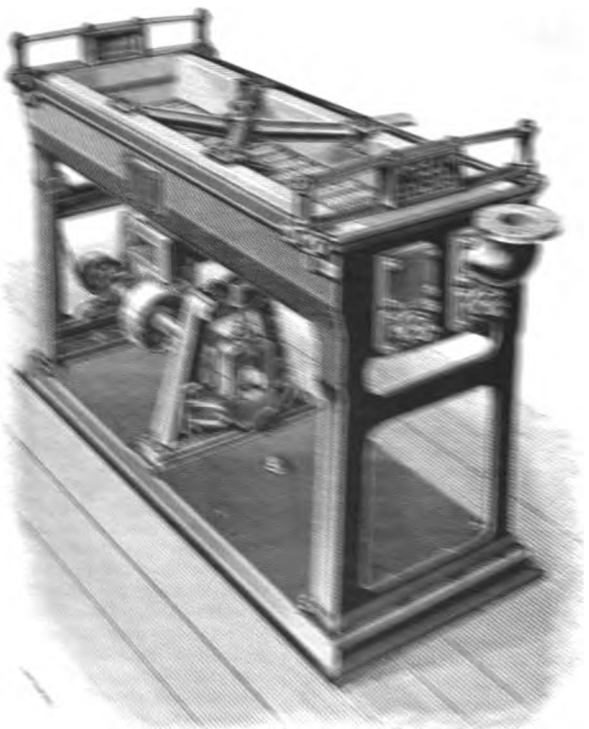

BRUCE'S PATENT FLAT STRAINER.

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BEST AND CHEAPEST IN THE MARKET.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

DISSOLUTION OF PARTNERSHIP.—The partnership heretofore subsisting between Messrs. A. C. Wansbrough and W. H. Worrall, paper manufacturers, of Watchet and Cheddar, carrying on business under the style of Wansbrough and Worrall, has been dissolved by mutual consent, Mr. W. H. Worrall seceding from the firm.

BOXMOOR MANUFACTURING COMPANY, LTD.—Registered with a nominal capital of £10,000 in £1 shares. Object, to acquire the Two Waters Mill, Boxmoor, Hertfordshire; to adopt an agreement with J. H. Browne and J. Porteous, and to manufacture, sell, and deal in paper, millboard, leather, board panels, etc. The first directors are J. H. Browne and J. Porteous (permanent managing directors). Qualification, 200 shares. Remuneration, £500 each per annum. Registered office: Two Waters, Boxmoor, Hertfordshire.

BURY PAPERMAKING CO., LTD.—The half-yearly meeting of shareholders in the Bury Papermaking Co., Ltd., was held at the mills, Gigg, on Wednesday, last week. Mr. John Cronshaw, of Heap Bridge, presided. The proceedings were very short, there being no officers to elect. The balance-sheet showed a gross profit of £4,772. After charging interest and depreciation amounting to £2,271, and adding balance brought forward from last half-year, there was a disposable balance of £2,944. The directors recommended the payment of a dividend of 10 per cent. on the 10 per cent. preference shares, and 6 per cent. on the 6 per cent. preference and ordinary shares, placing £500 to reserve and contingent fund (making that fund £4,000), and carrying £737 to next half-year's account.

MR. J. T. MILLBOURN, who has been manager at the Phœnix Paper Mills, owned by Messrs. T. H. Saunders and Co., has resigned his position at the Hawley Mills after holding it for thirty years. The employees have presented Mr. Millbourn with a handsome clock and suitable address as a mark of their esteem.

PRESENTATION.—The employees at the Anchor Paper Works, Denny (proprietor, Mr. J. Luke, jun.), met on Friday evening, the 31st ult., for the purpose of presenting Mr. Wm. Gray, machineman, with a travelling bag, on the occasion of his leaving to take up a similar position in the Runneegunge paper mills, Bengal, India. Mr. W. Lister, traveller to the firm, made the presentation in the name of the employees, and in the course of a few appropriate remarks referred in eulogistic terms to the feeling of esteem and good fellowship in which Mr. Gray was held by his fellow workers. Several of the workmen having heartily endorsed these remarks, the rest of the evening was spent in a convivial manner, an excellent programme of songs, etc., being rendered. Mr. Gray carries with him the best wishes for success from all classes of employees of the firm.

MR. W. FRIEDLAENDER, wood pulp importer, of 60, Fenchurch-street, E.C., has issued a date-indicating pad and diary for 1898, with blotter combined, for desk use. It is an unique arrangement, and very serviceable.

"H.C.C." GOLF CHALLENGE CUP was won by Mr. W. D. Davidson, of Mugie Moss Mill, Aberdeen, for 1897:—Score, 83 (Handicap 3), 80 net; Mr. F. H. Monckton was second with 98 less 14, 84 net; and Mr. J. Dalgety Henderson third with 96 less 10, 86 net.

A MONSTER STOCK FOR MILLING PURPOSES.—The following are particulars of what is known to be the largest stock in England, with one pair of stock feet. The stock is 58-in. wide when lined inside measure, will mill 700-lbs. weight, and can be made, if required, to mill 800-lbs. It is used for milling dry felts and heavy woollen goods. The stock has been constructed by the well-known firm of Messrs. James Schofield Bros., millwrights, Bagslate, for Messrs. Thomas Hardman and Sons, woollen manufacturers and felt makers, Fernhill Mills, Bury.

CHIRNSIDE BRIDGE PAPER MILL.—The following notice was posted at the gate of the Chirnside Bridge Paper Mill at the latter end of last month:—"As the work in the mill has been somewhat seriously interfered with by the alterations now being made, the directors are not sure that the profits made during the last six months justify them paying a bonus this year, and, as the financial year now terminates in June, the matter cannot be conclusively shown till then. In the hope, however, that after the alterations are made, the further efficiency of the works, and the increased industry and carefulness of all connected with them, may justify the course, the directors have decided again to give a bonus of one week's wages, which will be paid on 31st December current."

CHRISTMAS PRESENTS. — On Friday, December 24th, the employees of the British Paper Co., Ltd., at Frogmore Mill, were presented with a handsome "Christmas Box." Each man received a fat goose, 6 cigars, 1 oz. of tobacco, and a plum pudding, while the women and boys had a goose and a plum pudding each. On behalf of the workpeople Mr. J. Pitts, the manager, thanked the firm heartily for their generosity, and asked leave to present to Mr. P. H. Sanguinetti, managing director of the firm, and Mr. C. H. Sanguinetti, a slight token of esteem offered by their employees. He then handed to Mr. P. H. Sanguinetti a pair of bronze and ornamental jugs, and to Mr. C. H. Sanguinetti a silver fruit knife.

THE MARSHALL ENGINE CO., of Turner's Falls, has just been incorporated with a capital stock of 60,000 dols.

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TELEGRAPHIC ADDRESS
"GOODWIN" LONDON.

REGISTERED FROM
115 & 117 CANNON STREET, E.C.

BECKER & Co.,

64, Cannon Street, - LONDON, E.C.

Wood Pulp

Sulphite,
Soda,
Mechanical.

SPECIALITY

FINEST QUALITIES OF

Mechanical Pulp.

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Paper and Paper Stock.

AMERICAN IMPORTS & EXPORTS.

The following imports and exports of paper and paper stock are for the month of October—the latest period for which the official figures have been compiled by the Treasury Department—supplied to the *World's Paper Trade Review* by the Associated Trade and Industrial Press, of Washington, D.C.:—

IMPORTS.

The total amount of crude paper stock imported duty free during October amounted to 231,389 dols., against 260,886 dols. worth last year. The ten months' total amounted to 2,650,298 dols., as compared with 2,453,803 dols. for the same period of the year before.

Of this total were 3,881,731 pounds of rags other than woollen, valued at 43,397 dols., against 2,384,835 pounds of rags other than woollen, valued at 45,199 dols. last year. The total for the ten months amounted to 42,573,875 pounds other than woollen, valued at 560,754 dols., as compared with 29,038,731 pounds other than woollen, valued at 464,251 dols. worth during last year.

All other crude paper stock not otherwise specified amounted in October to 182,992 dols., against 142,488 dols. worth last year. The total for the ten months amounted to 2,808,544 dols., as compared with the imports of last year, which was 1,989,552 dols.

The dutiable imports of manufactures of paper amounted to 231,930 dols., against 260,886 dols. worth last year. The total for the ten months amounted to 2,514,788 dols., as compared with 2,552,006 dols. worth the previous year.

The countries imported from were the United Kingdom, who purchased of the United States to the value of 42,900 dols., against 48,612 dols. worth last year. The total for the ten months amounted to 464,083 dols., against 441,938 dols. worth during the same months last year.

The shipments of Belgium to this country were valued at 5,424 dols., against 4,120 dols. worth last year. The total for the ten months amounted to 75,349 dols., as compared with 68,479 dols. worth last October.

Shipments from Germany amounted to 151,687 dols., against 22,644 dols. worth imported in October, 1896. The total for the ten months amounted to 1,570,365 dols., as against 1,635,339 dols. worth imported last year.

The United States received from other countries in Europe shipments to the value of 3,084 dols., against 2,652 dols. worth last year. The total for the ten months amounted to 22,372 dols., against 27,763 dols. worth last year.

Shipments from Japan amounted to 11,250 dols., against 14,381 dols. worth the year before. The total during the ten months amounted to 102,344 dols., as compared with 169,150 dols. worth last year.

Shipments from other and scattered countries amounted to 1,856 dols., against 2,834 dols. worth during October of last year. The total for the ten months amounted to 22,372 dols., as compared with 27,763 dols. worth last year.

Books and other printed matter were imported duty free in October to the amount of 137,727 dols., against 142,431 dols. worth in the same month of last year. The total for the ten months amounted to 1,425,018 dols., as compared with 1,518,592 dols. worth imported in 1896.

The dutiable imports of the same period were imported to the value of 138,206 dols., against 127,267 dols. worth last year. The ten months' total amounted to 1,094,053 dols., as compared with 1,160,146 dols. worth during the corresponding period of last year.

EXPORTS.

The total exports of paper and manufactures of paper amounted in October to 419,672 dols., against 225,960 dols. worth exported in October a year ago. The total for the ten months amounted to 3,589,184 dols., as compared with 2,333,669 dols. worth during the same period of 1896.

Of this total were writing paper and envelopes to the value of 13,763 dols., against 9,525 dols. worth exported in the same month of last year. The total for the ten months amounted to 116,292 dols., against 92,863 dols. worth last year.

Also of this total were paper hangings valued at 9,591 dols., as compared with 3,777 dols. worth the year before. The total for the ten months amounted to 128,123 dols., against 73,791 dols. worth last year.

All other paper and manufactures of paper exported in October amounted to 173,113 dols., against 212,667 dols. worth last year. The total for the ten months amounted to 2,508,601 dols., as compared with 2,167,015 dols. worth exported last year.

Books and other printed matter were exported in October to the value of 282,799 dols., against 292,008 dols. worth last year. The total for the ten months amounted to 2,075,794 dols., as compared with 2,021,014 dols. worth last year.

RE-EXPORTS.

The free re-exports of rags other than woollen amounted to 8,865 pounds, valued at 125 dols., against 18,350 pounds, valued at 367 dols. worth last year. The total for the ten months amounted to 55,875 pounds, valued at 1,065 dols., as compared with 55,940 pounds, valued at 1,182 dols. the year before.

The free re-exports of all other crude paper stock amounted to 4,141 dols., against 3,923 dols. worth in the ten months of 1896. There were no re-exports during the month.

NOTICE TO THE TRADE IN SCANDINAVIA.

SUBSCRIPTIONS for "The World's Paper Trade Review" are accepted at any Post Office in Norway and Sweden, and intending New Subscribers for 1898 can arrange to transmit their orders through that medium, if so desired.

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TELEGRAPHIC ADDRESS:
"ODONTOID, LONDON."

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64, Cannon Str

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MYRENS

ENGINEERING WORKS.

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Specialties:

THE MOST IMPROVED

Turbines,
Pulp Grinders,

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DESIGNERS and CONSTRUCTORS

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Wood Pulp, Cellulose & Paper Mills

in Scandinavia.

STOCKHOLM ..... 1866. CHRISTIANIA ..... 1876.
PARIS ..... 1878. CHRISTIANIA ..... 1885.
FREDRIKSTADT ..... COPENHAGEN ..... 1888.

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GERMANY.

PROFIT SHARING.—Herr H. Füllner, in Warmbrunn, has paid 5 per cent. of the year's profits to his workmen as a Christmas present. At a meeting of workmen this generosity of the firm was duly appreciated, and it was pointed out that in 1897 the firm paid in wages alone 280,000 marks, and in premiums the further sum of 14,000 marks.

SACHSISCHE MASCHINEN FABRIK, in Chemnitz.—It has been decided to raise the share capital from 10,000,000 marks to 12,000,000 marks.

MASCHINEN FABRIK AKTIEN GESELLSCHAFT VORMALS WAGNER AND CO., in Coethen, Anhalt.—A 2½ per cent. dividend is pronounced for the business year ending September 30th. Last year no dividend was paid.

SPAIN.

SPAIN AND CERTIFICATES OF ORIGIN.—The Foreign Office state:—"Information has been received from Her Majesty's Chargé d'Affaires at Madrid that the Spanish Government have consented to suspend the operation of the new regulations in respect to certificates of origin, which were to come into force on the 1st inst. until the 15th inst. A full statement of the regulations and forms of certificates to be used henceforth will be issued immediately the details are received from Madrid, and copies of it will be communicated to Chambers of Commerce. In the meanwhile those interested in trade with Spain are recommended to make themselves acquainted, through their agents, with the exact requirements of the new regulations."

UNITED STATES.

THE exports of paper at New York, according to the last weekly list received, included: To London, 2,137 packages and 440 bundles; Liverpool, 3 packages; Hull, 310 packages; Glasgow, 627 packages; and Dundee, 74 packages. Amsterdam received 213 packages; Bremerhaven, 35 cases; Hamburg, 1 package and Havre 1 case. Other shipments included: To Brazil, 15 packages; B. Australasia, 712 packages; B. W. Indies, 2,020 packages; and N. Zealand, 201 packages.

WEST VIRGINIA PULP AND PAPER CO.—We are advised that this company has purchased the plants and stock of the Piedmont Pulp and Paper Co., West Virginia Paper Co., and West Virginia Pulp Co., and will continue the business carried on by those companies. Mr. Wm. Luke is president, and the office is at 309, Broadway, New York, N.Y.

THE MANUFACTURE OF NEWS BOARDS.—A law case of some interest to American manufacturers of news boards will shortly be heard, the patentees claiming the sole right to make box boards from printed papers alone or in conjunction with other stock, the component parts of the ink being retained in the product, the process excluding the use of both alkali and size.

PETER SPENCE & SONS,
Manchester Alum Works, Manchester, and Goole Alum Works, Goole.
MANUFACTURERS OF
Pure CRYSTAL ALUM
High-Class Sulphate of Alumina,
ALSO OF THE WELL-KNOWN ALUMINOFERRIC.

HENDERSON CRAIG & Co. LIM.

WOOD PULPS	WET FELTS	CHEMICALS	ROSIN
RAGS	DRY FELTS	BLEACH	GELATINE
ESPARTO	MACHINE WIRES	ALUM	HIDE PIECES
STRAW PULPS	BELTING	STARCH	OILS

1908

EDINBURGH: 16, PRINCES STREET. 97, Queen Victoria Street, LONDON, E.C. MANCHESTER: 18, OLD CORN EXCHANGE.

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Canadian Notes.

AN ENGLISH SYNDICATE is [illegible] to secure certain pulp wood limits in the eastern part of Quebec, north of St. Lawrence.

A NEW [illegible] is to be constructed at East Angus, Que. It will be remembered that a mill was burnt down at this place last summer.

THE ROYAL [illegible] of Montreal will shortly put up a [illegible] plant at [illegible] to their pulp mill at Angus, Que. A new machine has been ordered of Mr. Richard Smith, Sherbrooke, Que.

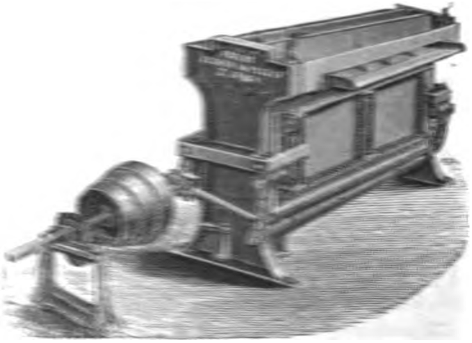
[illegible] — [illegible] have been made [illegible] [illegible] [illegible]

[illegible]

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

OVER [illegible] AT WORK.

FACTS SPEAK FOR THEMSELVES—

[illegible] They [illegible] We have had [illegible]

FEATURES—

SUPERIOR to any other System [illegible]

[illegible] with any kind of Pulp.

[illegible] Working

[illegible] Machine, &c.

AGENT—

ALPH. STEIGER C.E.

[illegible]

[illegible] Papermaking

[illegible]

[illegible] SUPPLIES

[illegible] Works

[illegible] & SUTCLIFF,

Wardrobe Chambers, [illegible], London

ESTABLISHED A.D. 1736.

WILLIAM MAKIN & SONS,

Attercliffe Steel Works, Sheffield, England.

PAPERMAKERS' STEEL TOOLS.

2423

Illustrated Catalogue and Price Lists, in French and English, on demand.

FILTERS

For dealing with the Largest Quantities of

Dirty River or Canal Water,

rendering same Perfectly Clear and suitable for every use in Paper Mills, &c.

PURE WATER

IS AN ECONOMY

NOT A LUXURY.

Write for List No. 87 Post Free

PULSOMETER ENGINEERING Co., Ltd., Nine Elms Ironworks, London, S.W.,

and at 8, YORK STREET, GLASGOW, and 1, EAST PARADE, LEEDS 3079

Christophersen, Andrews & Co.,

91, QUEEN VICTORIA STREET,

Telephone No. 85[illegible] Bank. ***LONDON, E.C.***

Sulphite, Soda & Mechanical WOOD PULPS.

TELEGRAPHIC ADDRESS: "ARBORARIUS, LONDON."

Sole Agents for the MAGO MECHANICAL and HAFSLUND SULPHITE PULPS

(ENGLAND AND IRELAND.)

AUTOTYPE, PHOTOENGRAVING, ETCHING, and WATER-COLOUR POST CARDS

1. Views of Cities. (2.) Pictures of Modern Masters. (3.) Beautiful Children, a. s. o. (Yearly Edition 2,000 different subjects). Will be delivered in 2 Sample Collections for One Shilling, or for Three Shillings (in stamps), from

A. HILDEBRANDT, Fine Art Publisher, LINKSTRASSE 30, BERLIN, W.

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from all countries except America. This is very suggestive, for Canada makes paper of similar characteristics to the American make. One is therefore naturally confronted with the question, "Why should not Canada use her pulp in making paper for the Mother Country, instead of supplying her neighbour with the material to do so?" Lord Strathcona and Mount Royal adds that he intends visiting Canada soon to interview the pulp and paper manufacturers regarding the opportunities afforded by the British market. The High Commissioner is not likely to let this idea drop until he has made a success of it. There are several reasons for believing so. In the first place, it originated with himself, and he may be trusted to exert himself to prove that it is worth something. In the second place, as there has been quite a cry raised lately that the trade interests of the country are not adequately served by the High Commissioner's office, and that it should be supplemented by a commercial agency, we may expect Lord Strathcona to do his utmost to demonstrate the commercial usefulness of his office by building up a paper trade from nothing to respectable proportions. In third place, it is to be taken into account that Lord Strathcona and Mount Royal never makes a failure of anything he takes hold of. He is a man of very great tenacity of purpose and exceptional business ability. He is one of Canada's wealthiest men. He is president of the Hudson Bay Company and of the Bank of Montreal. He is one of the Canadian Pacific Railway magnates. Sir William Van Horne, with whom he was closely associated in the direction of the affairs of that road, is on the board of the Laurentide Pulp Company, which is now building a paper mill. Hence it is with very great satisfaction that Canadian paper manufacturers learn of his intention to push their interests in the British market.

Stocks and Shares.

Since my last report of a fortnight ago, very little of note has taken place in the Paper share market, but the few changes are mostly of an upward tendency. Waterlow and Sons have re-arranged their capital, by substituting for the ordinary shares the non-cumulative deferred share and the non-cumulative preferred share, and reducing the preference dividend from 6 per cent. to one of 3½ per cent. cumulative, consequently the prices are different as below. Olive Bros. have been active, and show a rise of ¼, and Partingtons (fully paid) have risen ¼. North of Ireland are firmer at an advance of 1/16, and T. Owen and Co. preference are 6d. higher. Bergvik Co. have paid the half-yearly dividend on the debentures, and are now quoted x.d.

In the Chemical market, Bowman, Thompsons are rather easier. Brunner-Monds are much improved in price, and show a rise of ½ on ordinary, ⅝ on new ordinary, and ¼ on the preference. F. Steiner's are firm at x.d. prices. Castner-Kellners have improved 1s., and are more enquired for. United Alkali preference show an advance of 1/16, and debentures are quoted x.d. Others quiet.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices Jan. 5th.
5	5	Hyde Paper Works Co.(Ld.)	nil	1½—2
10	10	Bath Paper Mill Co. ,,	5	11⅛—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—104x.d.
10	10	do. do. 6% pref.	6	12—13
3⅛	5	Burnley Paper Co. (Ld.)	10	5⅞—6⅛
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref.	6	7⅛—7⅛
2¼	3	Collin (Darwen) Paper ,,	nil	1/16—1/8
3¾	5	Darwen Paper Co. ,,	15	7½—8
10	10	E. Lancashire Paper Co. ,,	nil	5⅛—5½
10	10	do. do. 6% pref.	nil	5¾—6
5	5	do. do. bonus	nil	2¼—2½
4	5	Hartlepool Pulp & Paper,,	10	7⅜—7⅞
2¾	5	Kellin'r-Part'gt'n P'p Co,,	15	7⅞—8
5	5	do. do.	15	13½—14
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7 1/16—7 1/8
7	10	Olive Brothers ,,	10	7½—7⅞
5	5	Peebles (A. M.) & Son ,,	8	7¼—7½
5	5	do. 5% cum. pref.	5	6⅛—6⅜
100	Stock	do. 4½% deb. issued 105	4½	111½—112½
3	5	Ramsbottom Paper Co. ,,	10	6¾—7
1	1	do. do. cum. pref.	5	1¼—1½
4½	5	Roach Bridge Paper Co. ,,	7½	4⅛—5⅛
5	5	Star Paper Co.	10	7¼—7⅜
3	5	do. do. cum. pref.	10	6—6½
0	100	Thomas Owen and Co. deb. (repayable on notice at 110)	5	114—115
1	1	do. do. 6% pref.	6	27/—27/6
1	1	do. do. ord.	12½	2—2½
10	10	Waterlow & Sons non.-cum. def.	12	14¼—14¾
10	10	do. do. non.-cum. pref.	3½	14¾—15¼
10	10	do. do. cum. pref.	3½	10¼—11¼

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7⅛	8⅛—8⅜
10	10	do. do. cum. pref.	7	11¼—11½
100	100	do. do. debs. (red. 1904)	6	107—109
10	10	Brunner, Mond & Co. (Ld.)	20	39½—40
3½	10	do. do. "New" ,,	20	15⅝—15⅞
10	10	do. do. 7% pref. ,,	7	18—18¼
5	10	do. do. do. new issue	7	8¾—9¼
1	1	Castner-Kellner Co. ,,	—	22/6—23/6
5	5	Clayton Aniline cum. pref.	6	5⅝—6⅛
10	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11¼—12 x.d.
100	Stock	do. do. deb. stock (red. 1912).	4	105—107x.d.
10	10	United Alkali Co. ,,	2	2 3/16—2¼
10	10	do. do. cum. pref.,,	7	9 1/16—9 5/16
100	Stock	do. mort. deb. (red. after 1901)	5	110—110½x.d

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	10	9	—
BELGIUM	2166	1	38
CHINA	—	53	—
CHANNEL ISLES ...	7	—	—
DENMARK...	109	—	—
FRANCE	1076	94	—
FINLAND	834	—	—
GERMANY	7863	20	239
HOLLAND	16810	25	111
JAPAN	—	59	—
NORWAY	283	—	234
SPAIN...	108	—	—
SWEDEN	6310	—	1068
U.S.A....	5,83	119	331

Including the Following:—

Quantity	From	Importer	Port
130 bales	Christiania	Davies & Royle	London
24 ,,	,,	Alsing & Co	,,
18 ,,	,,	F. E. Foulger	,,
37 ,,	,,	Becker & Wagner	,,
155 ,,	,,	W. E. Bott & Co	,,
244 ,,	,,	O. Partington	,,
14 ,,	,,	Witting Bros.	,,
80 ,,	,,	Cookson MacDonald	,,
20 ,,	,,	C. Morgan	,,
13 ,,	,,	Crabb & Co	,,
55 ,,	,,	R. Ulrich	,,
33 ,,	,,	J. Spicer & Son	,,
13 ,,	,,	J. Feller & Co	,,
74 ,,	,,	H. Puckert	,,
46 ,,	Danzig	Elkan & Co	,,
87 ,,	Gothenburg	J. Eberstein	,,
49 ,,	,,	Becker & Wagner	,,
100 ,,	,,	C. Morgan & Co	,,
15 ,,	,,	E. Saunders & Co	,,
58 ,,	,,	J. Spicer & Son	,,
51 ,,	,,	R. L. Lundgren	,,
15 ,,	,,	Relph & Co	,,
9 ,,	,,	E. E. Sabel	,,
37 ,,	,,	Grosvenor & Co	,,
13 ,,	,,	Felber, Jucker & Co	,,
34 ,,	,,	Davies & Royle	,,
998 ,,	,,	Schenkenwald & Co	,,
17 ,,	,,	L. C. Lockwood	,,
337 ,,	,,	R. Lundgren	,,
254 ,,	,,	Green & Co	,,
28 ,,	,,	Becker & Wagner	,,
38 ,,	,,	E. E. Sabel	,,
110 ,,	,,	J. Eberstein	,,
78 ,,	,,	Relph & Co	,,
18 ,,	,,	Brough & Co	,,
26 ,,	,,	Saunders & Co	,,
10 ,,	,,	C. Morgan	,,
22 ,,	,,	Spicer & Son	,,
8 ,,	,,	G. Boor & Co	,,
61 ,,	,,	Alsing & Co	,,
16 ,,	,,	Schenkenwald & Co	Hull
32 cases	New York	Somerville & Sons	Liverpool
37 ,,	,,	Bahr, Behrend & Co	,,
1 ,,	,,	Louis Cassier & Co	Southampton
4 bales	,,	Wyckoff & Co	,,
6 ,,	,,	Typewriter Co, Ltd	London
4 ,,	,,	Wyckoff & Co	,,
50 ,,	,,	Butler & Crispe	,,
100 ,,	,,	J. M. Richards	,,
1328 ,,	,,	Lepard & Smith	,,
50 ,,	,,	Spalding, Hodge & Co	,,
415 ,,	,,	Dickinson & Co	,,
981 ,,	,,	Grosvenor, Chater & Co	,,
801 ,,	,,	Schenkenwald & Co	,,
173 ,,	Norrkoping	J. Eberstein	,,
8 ,,	,,	E. E. Sabel	,,
47 ,,	,,	J. Spicer & Son	,,
1,23 ,,	,,	Skarblacka	,,
6 cases	Philadelphia	Henderson & Davies	London
178 bales	Portland	Winnie & Sons	Southampton
104 ,,	Stockholm	Saunders & Sons	,,
8 ,,	,,	Clayton & Co	,,
3 ,,	,,	Rosedale & Sons	,,
8 bales	Stettin	G. T. Carlyle	Liverpool
15 ,,	,,	Cooke & Simons	,,
8 ,,	,,	Cookson McDonald	,,
22 ,,	Skien	A. J. Brown, Brough & Co	London
8 ,,	,,	Sands & McDougall	,,
4 ,,	,,	Spicer Bros	,,
10 ,,	,,	J Hamilton	,,
115 ,,	,,	J. Spicer & Sons	,,
450 ,,	Uddevalla	D. Gulland	,,
54 ,,	,,	R. L. Lundgren	,,
9 ,,	Yokohama	Berrick Bros.	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALIA	2430	459	—
AFRICA	106	76	84
BRAZIL	—	55	—
BELGIUM	—	9	—
CAPE COLONY	—	32	10
CANADA	—	—	194
CHINA	—	23	10
CHANNEL ISLES ...	33	—	—
FRANCE	—	10	23
GIBRALTAR	—	—	10
GERMANY...	—	37	23
HOLLAND...	—	—	41
INDIA...	—	78	—
ITALY...	—	—	2
MAURITIUS	—	—	12
NORWAY	—	—	2
NEW ZEALAND ...	184	340	232
PORTUGAL	—	16	54
SWEDEN	—	—	3
SPAIN...	—	—	11
U.S.A....	39	449	113

FROM LIVERPOOL.

(Unclassified.)

	Bales.	Cases.	Rolls
CAPE COLONY	—	10	11
CANADA	—	1	—
CHILI	2	6	13
EGYPT	—	—	—
INDIA...	56	1	—
SPAIN...	4	—	—
TURKEY	—	2	—
U.S.A....	—	6	6
W. INDIES	—	1	—

FROM GLASGOW.

	Printings. Cwts.	Writing. Cwts.	Various. Cwts.
CHILI	—	—	21
INDIA...	40	139	50
NORWAY	—	1	4

NEW PATENTS.

APPLICATIONS.

29,772. Improvements in and relating to drying or heating and surfacing cylinders used in the manufacture of paper and other materials. E. J. Curtin.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

1897.

1,577. Manufacture of pearl hardening or satin spar. Brothers and Brothers.

7,299. Driving of papermaking machines. Milne.

24,080. Treatment of leather waste and apparatus employed therein. Boult.

24,352. Machines for cleansing cellulose and the like. Wandel.

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SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries.

OFFICES—58, SHOE LANE, LONDON, E.C.

Situations Vacant.

MECHANIC wanted for large paper mill near London; must be able to use lathe.—Address, No. 7,170, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7170

WANTED, a Traveller for Paper Mill making Printings and News.—Address, No. 7173, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7173

WANTED, a thoroughly experienced salesman with a good connection in common news, and up to cheap printings.—Address, No. 7,169, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7169

WANTED an experienced Cutterman, wages 25s. per week; also two women experienced in finishing of paper, wages 14s. to 18s. per week.—Apply by letter with all particulars, to McMurray's Royal Paper Mills, Limited, Wandsworth, S.W. 7171

Situations Wanted.

FOREMAN Engineer and Millwright wants situation in paper mills; well up in steam engines and boiler and fast running; good testimonials from previous situation.—Address, No. 7,145, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7145

WANTED, situation as Blacksmith in paper mill; good testimonials from previous situations.—Address, "S.F.," No. 7172, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7161

Machinery.

FOR SALE.—Single Cylinder Machine (second hand), wire 69 inches wide, cylinder 90 inches diameter, all as presently making about 20 tons weekly.—Full particulars and price from Bertrams Limited, St. Katherine's Works, Sciennes, Edinburgh. 7160

FOR SALE, 4 cast-iron calender rolls, 80-in. wide, 14-in. diameter, with blocks and frames.—Address, No. 7,118, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7118

LEEDS.—Paper Mill Dismantling.—For Sale, the whole of the plant for brown papermaking, including 72-in. Fourdrinier machine, calenders, beaters, revolving boilers, and all the usual requisites; would be sold in one lot or piecemeal.—Mosley, Rent Collector, 6, Wormald-row, Leeds. 7176

WANTED.—One Pair of good Second-hand Deckle Straps, 25-ft. long exact.—Address, No. 7,174, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe Lane, London, E.C. 7174

Miscellaneous.

CAPITAL at 5 per cent. per annum can be obtained by established firms.—"Bank," care of Emmison's Advertising Offices, Manchester. 6943

FOR SALE.—Copies of the *World's Paper Trade Review*, from July 1st, 1894, to June 30th, 1895; handsomely bound in 2 vols., half-calf, with cloth sides and gilt lettered on back; condition as new: 10s. the two; a bargain. Also copies of vol. 2 of the *British and Colonial Printer and Stationer*, July to December, 1879, bound; 2s. 6d. each to clear, binding costs more. Contains the first six Nos. of the *Paper Trade Review*.—Address, No. 10865, office of the BRITISH AND COLONIAL PRINTER AND STATIONER, 58, Shoe-lane, London, E.C. 10865

IT IS WORTH YOUR WHILE TO BUY DIRECT.—The RELIANCE LUBRICATING OIL COMPANY supply on approval "Reliance" high-class NON-CORROSIVE LUBRICANTS, which, through their superiority, have the largest sale in the world. Engine, Cylinder and Machinery Oils, 11½d.; Spindle Oil, 9½d.; Loom Oil, 10½d.; Extra Special Cylinder Oil, 1s. 4d.; Extra Special Engine Oil, 1s. 4d.; Gas Engine and Dynamo Oils, 1s. 6d. per gallon; Light Machine Oil, 10d. Barrels free and carriage paid. Brick Oil, 4d. per gallon. Also Solid and Liquid Oils for all other purposes.—RELIANCE LUBRICATING OIL COMPANY, 19 and 20, Water-lane, Tower-street, London, E.C. Depots at Liverpool, Bristol, Hull, Cardiff, and Glasgow. Telegrams, "Subastral, London." A B C code used. Telephone No. "Avenue," 5,891. 3068

PATENT FOR SALE.—Shirt Cuff Memorandum Pad; penny article; invaluable to business men.—Address, R. H. Baxter, 84, Richmond-road, Bartonhill, Bristol. 7175

WANTED by a well-established Agent in London, the sale of a good news or printing paper at from 1¼d. to 1¾d. per lb.—Address, No. 7,166, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7166

NOW READY.

A Stämpelbok,

Or Book of the Trade Marks of the Chemical and Mechanical Wood Pulp Mills in Sweden and Norway.

Each Country in a separate volume, 8vo. cloth.

Compiled by Mr. K. VON HOFSTEN, Gothenburg, Secretary to the Association of Scandinavian Pulp Makers (Swedish Section).

☞ Copies can be had at the Office of the WORLD'S PAPER TRADE REVIEW, price 7,6 each post free.

These Books not only contain the Shipping Marks of each Mill, but give also full particulars about their Names, Owners, and Production; they should therefore prove Most Useful Guides to anyone connected with the Pulp Industry in Scandinavia.

Can also be had in One Volume, uniform with above, and in the ENGLISH LANGUAGE for 15/- net and post free.

Special Supplementary Lists of the New Mills started to the end of 1897 are now included.

Sole Agent or the U.K.:

W. JOHN STONHILL, 58, SHOE LANE, LONDON.

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane, London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester, Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams.

Telegrams—"STONHILL, LONDON."

CHEMICALS.—Markets continue dull. SODA ASH is firmer, and Ammonia shows an advance of 5s. per ton. CAUSTIC SODA, WHITE, 76-77%, stands at £8 10s. to £8 12s. 6d. BLEACHING POWDER is depressed, and low prices rule for home requirements. SULPHUR is firm at £5.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½%	5	5 0
,, ,, barrels	...	,, ,,	2½%	5	15 0
,, ,, tierces	...	,, Hull	2½%	5	2 6
,, ,, ,,	...	Goole	2½%	5	2 6
,, ,,	...	f.o.b. Glasgow	2½%	5	2 6
Alum Lump) ,,	...	f.o.b. Liverpool	2½%	4	12 6
,, ,, barrels	...	,, ,,	2½%	4	15 0
,, ,, tierces	...	,, Hull	2½%	4	12 6
,, ,, ,,	...	Goole	2½%	4	12 6
,, ,, ,,	...	London	2½%	5	2 6
,, ,, ,,	...	f.a.s. Glasgow	2½%	4	17 6
Alumina Sulphate	...	f.o.b. Tyne	net	3	11 3
Aluminoferric Cake, slabs		Liverpool ...	...	2	15 0
,, ,, tierces		,, ...	...	3	2 6
Alugina Cake, ... slabs		Glasgow ...	...	2	10 0
Blanc Fixe	...	f.o.b. Tyne	net	6	17 6
Bleach, ...	...	,, ,,	net	6	0 0
,, (soft wood)	...	f.o.r. Lancs.	net	5	15 0
,, (hard wood)	...	f.o.b. Liverpool	net	6	5 0
,, (soft wood)	...	landed London	net	6	12 6
Borax (crystals) ...	...	... ...	net	14	10 0
,, powdered ...	...	... ...	net	15	0 0
Chloride of Barium	...	f.o.b. Tyne	net	6	15 0
Caustic White 76%	...	f.o.b. Liverpool	net	8	15 0
,, 74%	...	,, ,,	net	8	10 0
,, 70%	...	,, ,,	net	7	10 0
,, 70%	...	f.o.r. Lancs.,	net	7	7 6
,, 60%	...	f.o.b. Liverpool	net	6	10 0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5	15 0
,, 60%	...	f.o.b. Liverpool	net	5	17 6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4	6 0
Soda Ash, Carbonated 58%		f.o.b. Liverpool	net	4	17 6
,, ,, 48%		,,	net	4	12 6
,, ,, 58%		f.o.r. Widnes	net	4	15 0
,, ,, 48%		,, ,,	net	4	10 0
,, Ammonia 58%		f.o.b. Liverpool		4	5 0
,, ,, 48%		,,		4	0 0
,, Caustic 48%		,,		4	17 6
,, ,, 57-58%		,,		5	2 6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5	0 0
,, 10-ton lots		ex ship Liverp'l	net	5	10 0
Oxalic Acid	...	f.o.b. Liverpool	3½%	per lb	3
Salt Cake	...	on rail, in bulk		1	2 0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		33	0 0
,, (2nds)	...	,,		31	0 0
Soda Crystals ...	...	f.o.b. Tyne	net	2	15 0
,, ,, ...	...	ex ship Thames	2½%	2	15 0
,, ,, ...	...	f.o.b. Liverpool	5%	2	17 6
Sulphur, roll ...	...	f.a.s. works	2½%	6	5 0
,, flowers ...	...	,, ,,	2½%	7	5 0
,, recovered	...	,, ,,	2½%	5	0 0
Sulphate of Ammonia ,,		,, ,,	2½%	9	5 0
,, of Copper ...		,, Liverpool	5%	15	15 0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	5	0	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15	0
Blanc Fixe (c.i.f. London)	...	7	0	0
White Sugar of Lead	...	24	0	0
Zinc Oxide	...	18	0	0
Bleaching Powder	...	5	15	0

CHEMICAL WOOD PULPS.—Business quiet, and quotations are without change.

BRITISH QUOTATIONS.

Prices, ex steamer, London, Hull, Newcastle, Leith and Glasgow are nominally as follows:

SULPHITE, Unbleached, Common	£8	15	0	to	9	0	0
,, Superior ,, ...	9	0	0	,,	9	10	0
,, Bleached, ...	11	10	0	,,	15	0	0
SODA, Unbleached, Common ...	8	5	0	,,	8	10	0
,, Extra...	8	15	0	,,	9	5	0
,, Bleached	10	10	0	,,	12	0	0

SCANDINAVIAN QUOTATIONS (Official).

Prime Sulphite, f.o.b....	Kr. 16		
Sulphate, f.o.b.	Kr. 120	to	Kr. 140

FRENCH QUOTATIONS.

C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.25	to	25.
,, Bleached	31.	,,	36
SODA, Unbleached	21.	,,	24.
,, Bleached	28.	,,	30.
SULPHATE, Unbleached	21.	,,	24.
,, Bleached	28.	,,	30.

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached ...	2	to	2½
,, SODA Bleached ...	1¾		2
FOREIGN SODA, Unbleached			2·2c.
,, ,, Bleached			2·90c.
,, SULPHITE, Unbleached ...	2·30	,,	2·75c.
,, ,, Bleached... ...	3.25	,,	3·30c.

MECHANICAL WOOD PULPS.—Scandinavian manufacturers are firm in their quotations. The market, however, is without any noteworthy movement.

BRITISH PRICES.

Ex steamer, London, Hull, Newcastle, Leith and Glasgow are as follows:

Aspen, Dry	£6	10	0				
Pine, Dry £4 12 6	to	5	0	0			
,, Moist 2 7 6	,,	2	10	0			
Brown, Dry	4	15	0				
,, Moist	2	10	0				

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt

Pine Pulp, 50% moisture, ordinary ...	Frs. 12.50	to	13.
,, ,, fine ...	13.	,,	13.50
,, dry, ordinary	11.50	,,	12.
,, ,, fine	12.50	,,	13.
Aspen. ,, ,, ...	16.	,,	18.
Half-Chemical Brown, 50% moisture	12.50	,,	13.
,, ,, dry ...	12.50	,,	13.

AMERICAN QUOTATIONS.

F.o.b. Mill ... ...

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
1264 bales	Ternuzen		London
269 ,,	Gothenburg	Green and Co	,,
34 ,,	,,	Spicer Bros	,,
30 ,,	,,	Spicer & Son	,,
92 ,,	,,	R. L. Lundgren	,,
200 ,,	,,		,,
125 cases	,,	F. E. Foulger	,,
406 bales	Moss	W. G. Taylor & Co	,,
203 ,,	,,	Becker and Co	,,
240 ,,	Norrkoping	Christophersen & Co	,,
280 ,,	,,	Alsing and Co	,,
1515 ,,	Boston		,,
60 ,,	Ghent		,,
240 ,,	Stockholm		,,
350 ,,	Ghent		,,
250 ,,	Oporto		,,
60 ,,	Rotterdam		,,
4927 ,,	Christiansand	R. Lloyd Ltd	,,
5620 ,,	Drammen	,,	,,
280 ,,	,,	Becker & Co	,,
3000 ,,	Kragero	R. Lloyd Ltd	,,
35·9 ,,	Halifax		,,
110 ,,	Amsterdam		,,
460 ,,	Rotterdam		,,
8 ,,	Gothenburg	G. F. Green	

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Quantity	From	Importer	Port
121 bales	Gothenburg	R. L. Lundgren	London
8 ,,	,,	Spicer and Son	,,
305 ,,	,,	Tough & Co.	,,
292 ,,	,,	H. Pearsall	,,
68 ,,	,,	J. Cowens	,,
800 ,,	Hambro		,,
50 ,,	Rotterdam		,,
1013 rolls	Boston	Thin & Sinclair	Liverpool
1870 bales	St. Johns		,,
722 ,,	,,		,,
5710 ,,	Portland, Me.	D. Ewing and Co	,,
152 ,,	Rotterdam		,,
753 rolls	Boston	Thin and Sinclair	,,
387 bales	Helsingfors		Hull
204 ,,	,,		,,
139 ,,	Hambro		,,
1856 ,,	Drontheim		,,
835 ,,	Gothenburg		,,
1523 ,,	Christiania		,,
72 ,,	Hango		,,
1991 ,,	Gothenburg		Manchester
2150 ,,	New York		,,
3200 ,,	Kallero	Gallagher and Son	,,
16 ,,	Rotterdam		,,
946 ,,	Fiume		,,
16 ,,	Aalesund		Grangemouth
1910 ,,	Christiania		,,
481 ,,	,,		,,
380 ,,	Gothenburg		Granton
1740 ,,	Drammeu		,,
319 ,,	Skein		,,
5 ,,	Rotterdam		Grimsby
283 ,,	Baltimore		Leith
1158 ,,	St. John's		Glasgow
104 ,,	Rotterdam		Goole

Totals of Wood Pulp from Each Country:

BELGIUM ...	410 bales	NORWAY ...	175 cases
CANADA ...	7309 ,,	PORTUGAL ...	250 bales
FINLAND ...	1609 ,,	SWEDEN ...	8653 ,,
GERMANY ...	939 ,,	U.S.A.	27658 ,,
HOLLAND ...	2221 ,,	,, ...	1766 rolls
NORWAY ...	26280 ,,		

ESPARTO.—As usual during the Christmas and New Year holidays there is a pause in the transaction of business. Quotations, therefore, remain unaltered in the absence of actual dealings.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—	Fair to Good	£4 10 0	to 4 17 6
,,	Fine to Best	5 5 0	,, 5 6 3
Oran —	Fair to Good	3 0 0	,, 3 2 6
,,	First Quality	3 3 9	,, 3 6 3
Tripoli —	Hand-picked	3 0 0	,, 3 2 6
,,	Fair Average	2 15 0	,, 2 17 6
Bona & Philippeville	... ...	3 3 9	,, 3 6 0

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
6414 bales	Aguilas	Guardbridge Paper Co	Dundee
905 tons	,,	Morris and Co	Tayport
763 ,,	Carthagena		Granton
114 ,,	,,		London
8 ,,	Carboneras		Manchester
1810 bales	,,		,,
474 tons	Oran	J. Hassan	Glasgow
787 ,,	,,	R. H. Hay and Co	Granton

STRAW.—Prices:

Oat Straw,	... c.i.f.	London	42/0 ;	f.o.r. Goole,	42/0
Wheat ,,	...	do.	44/0 ;	do.	40/0
Rye ,,	...	do.	57/6 ;	do.	57/0

STRAW PULPS.—There has been more demand for straw pulp of late; prices firm.

Prices, c.i.f. London, Hull or Leith

German, dry. No. 1	£14	0 0
,, No. 2	£13	0 0

IMPORTS OF STRAW PULP.

Quantity	From	Importer	Port.
65 bales	Hambro		London
876 rolls	Philadelphia	Henderson, Craig & Co	,,
1000 bales	Rotterdam		,,

FOREIGN RAGS.—During the past week the arrivals from France and Belgium at British ports have been rather heavy. Shippers report trade to be fairly good. British imports of Foreign rags were as under:

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
106	Amsterdam	Hull	36	Auckland	London
25	Rotterdam	,,	84	Leghorn	,,
44	,,	,,	36	Amsterdam	,,
6	Hamburg	,,	47	Ghent	Goole
54	,,	,,	106	Hambro	,,
10	Harlingen	,,	155	Amsterdam	,,
267	Copenhagen	,,	28	Antwerp	,,
269	Ghent	,,	24	,,	,,
26	Bremen	,,	15	Hambro	,,
19	Harlingen	,,	28	Ghent	,,
4	Christiania	,,	111	Boulogne	,,
42	Antwerp	,,	120	Dunkirk	,,
145	Bremen	,,	88	Antwerp	,,
135	Dunkirk	,,	44	Boulogne	,,
8	Rotterdam	,,	174	Dieppe	Grimsby
12	Hamburg	,,	20	Rotterdam	,,
344	Konigsberg	,,	9	Hambro	,,
9	Rotterdam	,,	65	,,	,,
118	Bordeaux	,,	424	Dieppe	,,
25	Rouen	London	117	Caen	Newhaven
52	Ghent	,,	65	St. Nazaire	,,
44	Gothenburg	,,	44	Caen	,,
57	Ternuzen	,,	40	Dieppe	,,
77	Bordeaux	,,	35	Alexandria	Liverpl
11	Konigsberg	,,	32	Cherbourg	Stlmptn
2	Hambro	,,	61	St. Malo	,,
8	Dundee	,,	153	Ghent	Leith
23	Ghent	,,	138	Hambro	,,
38	Bordeaux	,,	370	Ghent	,,
30	Marseilles	,,	5	Antwerp	,,
74	Rouen	,,	38	Dunkirk	,,
18	Auckland	,,			

Totals from Each Country:

BELGIUM ...	1139 bales	N. ZEALAND	62 bales
DENMARK ...	267 ,,	NORWAY ...	4 ,,
EGYPT	35 ,,	PRUSSIA ...	355 ,,
FRANCE ...	1767 ,,	SPAIN ..	84 ,,
GERMANY ...	578 ,,	SWEDEN ...	44 ,,
HOLLAND ...	389 ,,		

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope (coils)	8/0	Not free from wood	5/0

FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Marseilles Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Blue Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ..	3/6	,, Stay ,,	15/0

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/6.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Lines	35 0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cuttings	21/0
Prints (Light) ...	8/6	Print Cuttings ...	8/6

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BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	12/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No 1 6/-: No. II	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	8/0
SPF	11/0	CSPFFF	14/0
FF	8/0	CSPFF	10/0
FG	8/6	CFB (Blue)	6/0
FFX	7/0	CFX (Coloured) ...	4/0

PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF	12,6	Jute I	3/0
FG	10/0	,, II...	2/0
LFB	8 0	Rope I	8/0
FF	5/6	,, II ...	6/0

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	and Canvas ...	7/0
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/6-12/0	Mixed ...	2/6-2/0

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons... ...	1/3	,, Small	4/6
Coloured ,, ...	1/3		

* At Smyrna and Salonica.

HOME RAGS.—LONDON: Steady enquiry. BRISTOL: There is every appearance of a good New Year's demand for all grades.—MANCHESTER: Market quiet; quotations unchanged. EDINBURGH and GLASGOW: The demand is quiet just now owing to holidays.—DUBLIN: Market steady.

LONDON

N. White Cuttings	18/0-18/0	Canvas No. 1 ...	14/0-15/0
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected) ...	11/0	Mixed Rope ...	3/0 4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/0	Gunny	2/0-2/3

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/0
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	2/0-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/6
Outshots	12/0	W. Manilla Rope ..	7/0
Mixed Firsts... ...	14/0	Tarred Manilla Rope	5/9
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Cotton (best)	15/0	Bagging...	2/3
2nd	8/	,, (clean) ...	3/0-4/0

GLASGOW.

Fines	12/6-16/0	Canvas No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues	3/3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	9/0

DUBLIN.

White Cuttings ...	16/0	Mill Bagging	/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp	6/0
Light Prints	2/6	Rigging	10/0
Black do.	1/6	Mixed Ropes ...	

WASTE PAPERS.—The market for waste papers is firm; light and dark browns show a rise of 3d.

Cream Shavings ...	10/0	Small Letters ...	3 0
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/3
White Printings ...	7/0	Light Browns	3/0
White Waste ...	1/9	Dark ,, ...	2/0
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/6
Blue Paper	2/0	Strawboard Cuttings	1/3
Crushed News	2/0	Jacquards	2/0

For Export: 2s/- per ton extra.

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common ...	£7 10 to £8 10
Good	£13 0 to £14 10	Rejections ...	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings ...	£3 0 to £4 0

SIZING.—Trade brisk; stocks small.

English Gelatines per cwt.	90/0 to 120/0		
Foreign ,, ...	70/0	,,	100/0
Fine Scotch Glues	45/0	,,	60/0
Long Scotch Glues	35/0	,,	40/0
Common Black ,, ...	25/0	,,	28/0
"Town" Glues	38/0	,,	45/0
"Pone" Glues	26/0	,,	30/0
Foreign Glues	28/0	,,	35/0
Bone Size	5/6	,,	10/0
Gelatine Size	6/6	,,	10/0
Dry B A. Pieces	50/0	,,	55/0
,, English Pieces	35/0	,,	45/0
Wet ,, ,, ...	8/6	,,	9/0
,, Sheep Pieces	3/0	,,	4/0
Buffalo Hide Shavings	32/0	,,	40/0
,, Picker Waste	32/0	,,	35/0

ROSIN.—The demand is rather quiet. Low grades of American are dearer. Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4 9	5/-	5 3	5/4½	5 6	6/-	6 3	6/9	7/-	8/-	9/-

STARCH.—Prices:

F.o.r. London, less 2½%

Maize—Crips, £12 0/-; Pearl, £6 10/-; Powder, £7 0/-
Special £14.
Farina—Prime, £9 10/-; E.K.M.F., £13 10/-.
Delivered, less 2½%:
Rice—Special (in chests), £30 0/-; Crystal (in bags) £18 10/-. Granulated (in bags) £17 10/-.
Dextrine—£15

COLOURS.—Prices:

Mineral Black ...	cwt.	3/6	PASTE COLOURS with 60% of colour, as follows		
do. superior ...	,,	4/0			
Pure Ivory Black	,,	12/0	Orange Pulp ...	cwt.	40/0
Ochre	,,	2/3	Golden Yellow Pulp		30/0
French J. C. Ochre	ton	60/0	Lemon ,, ..	cwt.	30/0
Chrome (pure) ...	cwt.	40/0	Prussian Yellow ,,		36/0
Red Oxide	,,	4/6	Green (free of arsenic		26/0
Umber, Devonshire	,,	50/0	Paste Blue, 20% ...		18/0
do. Turkish ...	,,	40/0	,, 35%; 26/0; 45%		45/0
Lamp Black ...	,,	5/0-7/6	Imperial Yellow (dry)		26/0
Ultramarine (pure)		35/0-45/0	(less 2½% d/d)		
Cochineal	lb.	4/6-2/0			

METALS.—LONDON: COPPER more active; TIN easier; LEAD dull. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	48	7	6	48	12	6
,, three months	48	17	6	49	2	6
Tough	50	0	0	50	5	0
Best selected	—			—		
Strong Sheets	58	0	0	—		
TIN—						
Fine foreign, cash	62	15	0	63	5	0
,, three months	63	8	9	63	18	9
LEAD—						
Spanish...	12	7	6	12	8	9
English...	12	12	6	—		

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MINERALS.—CHINA CLAY and FRENCH CHALK are in steady request, and MINERAL WHITE and SNOWDRIFT are in fair demand.

Mineral White (also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine	28/0	less 2½ % ; del. Lancashire ...		38/0
Pottery Super.	24/0	,,	,, ...	34/0
Ball Seconds ...	20/0	,,	,, ...	30/0
Seconds	15/0	,,	,, ...	25/0
Thirds	11/0	,,	,, ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/6 and casks 9/6 per ton extra ; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in casks 45/0 per ton ; f.o.b. Liverpool in 5 cwt. casks 47/- to 52/6.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 66/0, 73/6, 77/6 and 92/6 per ton, according to quality, less 2½ %.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool, I.W.A., "Portland Mills," and "Swan" marks, £4 15/- to £6 10/- per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-.

Patent Hardening (2 ton lots) f.o.r. Lancs., £3 5/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £6 10/0 ; calcined, £11.

Magnesite (in lump) 39/6 to 49/6 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, 35/- to 68/- per ton, according to quality.

Bauxite, minimum alumina, 60 %, 16/0 f.o.b.

Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.

Satinite, £3 to £3 6s. 0d., in casks, f.o.b L'pool.

Whiting, f.o.b., 10/6 to 13/6 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0 to £13 15/- del.

LIME.—The present price is 10/6 per ton f.o.r

BALING TWINE.—Prices :

	Nick.	Medium.	Fine
Hemp ...	4d. per lb.	4½d. per lb	5d. per
Mixed ...	3½d. ,,	4d. ,,	4½d. ,,

W. FRIEDLAENDER,

60, Fenchurch Street,

Telegrams: "LANDFRIED—LONDON." LONDON, E.C.

Sulphite, Sulphate & Soda Pulps.

BLEACHED & UNBLEACHED,

IN PURE STRONG FELTY QUALITIES.

ARABOL MANUFACTURING CO., NEW YORK,

Manufacturers of PAPER SIZINGS, COATINGS AND WATERPROOFINGS.

SPECIALTY—**MODEL ROSIN SIZE** Containing *85%* FREE ROSIN and Guaranteed not over 40% Moisture.

☞ It Economises Alum. It is Uniform in Quality. It is Cheaper & gives Better Results than Mill-made Size.

SOLE AGENTS for U.K.—W. J. FARMER, Eastcheap Buildings, LONDON, E.C

BERLIN: RUD. KROSEBERG, Lindenstrasse 69. 6991 a

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TWELVE MONTHS' Trade Marks

Relating to Paper and Pulp.

IN continuation of the illustrated list of the principal official Trade Marks, issued in connection with the various trades we represent, which we gave last January, as published in the *Trade Marks Journal* during the preceding twelve months, we give herewith a similar list for the past twelve months, beginning where we left off, viz., from December 23rd, 1896, and brought down to December 15th, 1897:—

193,409. Class 39. Paper (except paper hangings). Edward Lloyd, Limited, 4 and 5, Salisbury-court, Fleet-street, London, E.C.; and Swale Mill, Sittingbourne, Kent; paper manufacturers.—26th February, 1896. By consent.

197,811. Class 39. Paper (except paper hangings), stationery, and bookbinding, but not including ink or cigarette papers, and not including any goods of a like kind to any of these excluded goods. Edward Lloyd, Limited, 4 and 5, Salisbury-court, Fleet-street, London, E.C.; and Swale Mill, Sittingbourne, Kent; paper manufacturers.—9th September, 1896. By consent.

TERRIUCK

199,337. Class 39. Paper (not including paper hangings) and envelopes. James Spicer and Sons, 50, Upper Thames-street, London, E.C.; wholesale stationers.—9th November, 1896.

WULFRUNA

199,450. Class 1. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives. Adolphe Crosbie, Limited, 78A, Walsall-street, Wolverhampton; paint and colour manufacturers.—12th November, 1896.

SNOWDRIFT

199,990. Class 1. A size for use in the manufacture of paper, cardboard, and papier mâché. Snowdon, Sons and Co., Lowe's Wharf, Millwall, London, E.; manufacturers.—2nd December, 1896.

199,351. Class 1. Chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives, but not including sulphate of magnesia, sulphate of lime, alum, or chloride of zinc, and not including any goods of a like kind to any of these excluded goods. Günther Wagner, 67, Engelbostelerdamm, Hanover, Germany; and 23, Jewin-street, London; manufacturer of artists' colours.—10th Nov., 1896. And 199,352. Class 39. Paper (except paper hangings), stationery, and bookbinding, but not including inkstands, stationery cases, book slides, pens, or penholders, and not including any goods of a like kind to any of these excluded goods. Günther Wagner, 67, Engelbostelerdamm, Hanover, Germany; and 23, Jewin-street, London; manufacturer of artists' colours.—10th November, 1896.

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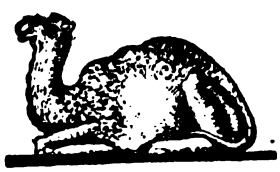
197,635. Class 3. All goods included in Class 3. Lever Brothers, Limited, Port Sunlight, near Birkenhead; soap manufacturers.—2nd September, 1896.

Tree Climber Mark

201,274. Class 47. Illuminating heating and lubricating oils. Ralli Brothers, Peter-street, Manchester: merchants.—14th January, 1897.



201,293. Class 35. Driving belts and carrying belts and aprons for machinery, all the said goods being composed of wool or admixtures of wool and other fibres, the wool predominating. F. Reddaway and Co., Limited, Victoria Mills, Cheltenham-street, Pendleton, Manchester; woven hose and machine belting manufacturers.—14th January, 1897. This trade mark also applies to 202,155 (Class 28), in which hemp takes the place of wool. Also to 202,156 (Class 29), in which jute is used. And also to the following:—

202,157. Class 40. Goods manufactured from indiarubber, not included in other classes, viz., sheets, belting; deckle straps; cords, insertions, buffers, rubber rollers (not being parts of machinery), valves (not being parts of machinery), washers, and tubing. F. Reddaway and Co., Limited, Victoria Mills, Cheltenham-street, Pendleton, Manchester, Lancashire; woven hose and machine belting manufacturers and manufacturers of rubber goods.—11th February, 1897.

The Marjorie Note

200,969. Class 39. Notepaper and envelopes. Tidball, Saw and King, 19, Paternoster-row, London, E.C.; wholesale stationers.—6th January, 1897.

IKA

201,626. Class 39. Paper (except paper hangings). William Hay Caldwell, trading as Caldwell and Co., paper mills, Inverkeithing, Fife, North Britain; paper manufacturer. 25th January, 1897.

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... Fleet- ... Chancery-lane, London, E.C., stationers.—19th December ...

LIVERPOOL

EGO

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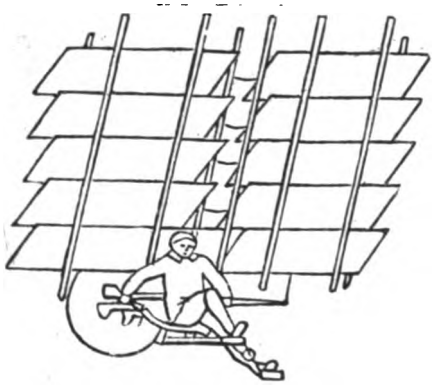
facing. Alfred Woodbridge Loveland, Hawarden House, Thorpe-road, Norwich; printer.—17th March, 1897.

FEDERAL.

199,321. Class 39. Writing papers. William Detmold, Limited, 19, New Bridge-street, London, E.C.; wholesale stationers.—7th November, 1896. By consent.



200,557. Class 39. Paper (not including paper hangings) and envelopes. James Spicer and Sons, 50, Upper Thames-street, London, E.C.; wholesale stationers.—22nd December, 1896.

THE EDRIC NOTE

200,970. Class 39. Notepaper and envelopes. Tidball, Saw and King, 19, Paternoster-row, London, E.C.; wholesale stationers.—6th January, 1897.

"STARLIGHT" PATENT STRAINER.

202,187. Class 6. Strainers, being parts of papermaking machines. Herbert Sanguinetti, 16, Old Bond-street, London, W.; financial agent.—20th February, 1897.

FOOTBALL

NOTE

J S & S

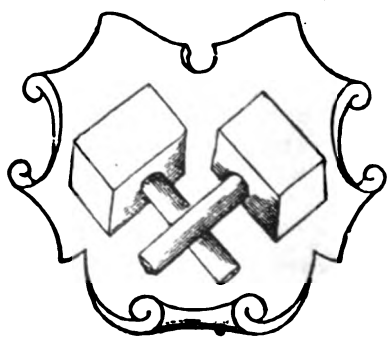
198,975. Class 39. Note paper and envelopes. James Spicer and Sons, 50, Upper Thames-street, London, E.C.; wholesale stationers.—26th October, 1896.

Boadicea

Antique Vellum

202,878. Class 39. Writing paper. H. Bertram and Co., 28, Queen-street, Cheapside, London, E.C.; paper merchants and agents.—5th March, 1897.

202,903. Class 41. Wall papers. William Bell and Co., Swinegate, York; wholesale dealers in paints and wall papers.—6th March, 1897.



204,074. Class 39. Paper (except paper hangings) and stationery. Robert Fletcher and Son, Kearsley Paper Mills,

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A. WERTHEIM & Co.,

HAMBURG,

SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

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CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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Stonecliough, near Manchester; paper manufacturers.—13th April, 1897.

MULCARTIS.

201,206. Class 39. Paper, but not including paper hangings. L. S. Dixon and Co., Limited, 7 and 9, School-lane, Liverpool; wholesale and export paper merchants. 13th January, 1897.

GRAND PRIX PARIS 1889.
6 MEDAILLES. DIPLOME D'HONNEUR ANVERS 1885.

200,500. Class 39. Cigarette papers. Prosper Piette, The Paper Mills, Freiheit, Bohemia, Empire of Austria; paper manufacturer. 22nd December, 1896. Address for service in the United Kingdom, c/o Haseltine, Lake and Co., 45, Southampton-buildings, London.

RELUGITE

202,896. Class 50. A material consisting of asbestos cloth impregnated with carbonaceous matter, for electrical resistances. Augustus John Marquand, 2, Dock-chambers, Cardiff, South Wales; consulting engineer. 10th March, 1897.

DIATRITE

203,328. Class 50. Insulating materials of all kinds included in Class 50, and not included in other classes. W. T. Glover and Co., Salford, Manchester; and 30, Victoria-street, Westminster; electrical engineers. 20th March, 1897.

The Paternoster Publishing Company

90,075. Class 34. Paper, except paper hangings, stationery, and bookbinding, but not including paste and not including any goods of a like kind to paste. The Paternoster Publishing Company, 30, Paternoster-square, London; publishers. —13th April, 1897.

203,322. Class 39. Paper (not including paper hangings) and envelopes. J. Spicer and Sons, 50, Upper Thames-street, London, E.C.; wholesale stationers.—20th March, 1897.

200,818. Class 1. All goods included in Class 1. The United Alkali Co., Ltd., G 11, Exchange-buildings, Liverpool; alkali manufacturers.—1st January, 1897.

THE IPSWICH TANNERY LIMITED

"HYDRA BELTING"

92,734. Class 37. Leather belting for machinery. The Ipswich Tannery, Ltd., 7, Portman-street, London, W., and The

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W. G. TAYLOR and Co., Ltd.

83, Queen Victoria Street,

LONDON, E.C.

ALSO AT

MANCHESTER.

WOOD PULPS,

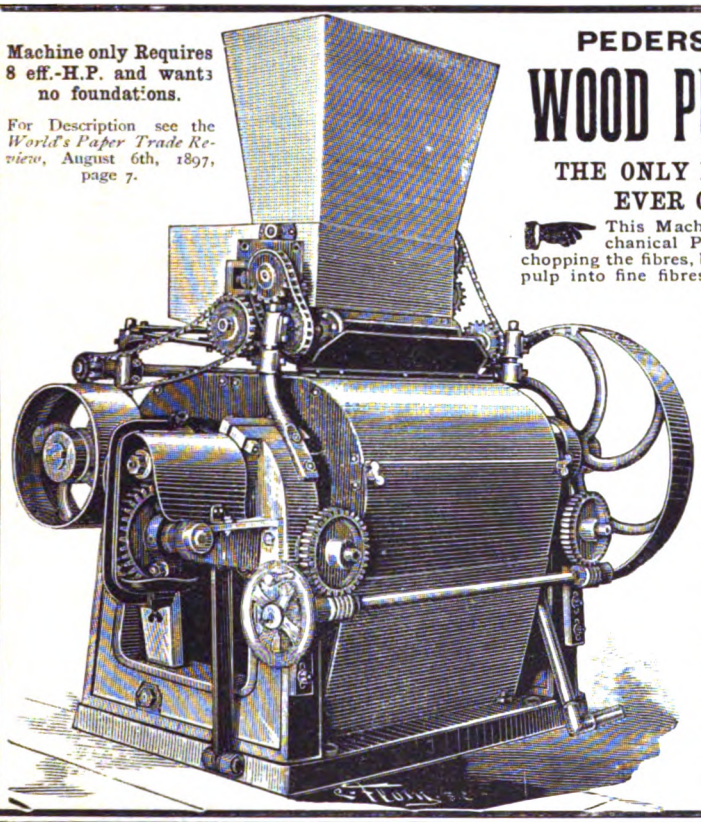
ESPARTO,

and ALL MATERIALS Used in the Manufacture of Paper.

SOLE AGENTS for this Country for the Celebrated WANDEL ROTARY STRAINER.

Machine only Requires 8 eff.-H.P. and wants no foundations.

For Description see the *World's Paper Trade Review*, August 6th, 1897, page 7.



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WOOD PULP REFINER

THE ONLY PERFECT REFINER EVER CONSTRUCTED.

This Machine treats Chemical and Mechanical Pulp properly, not cutting or chopping the fibres, but dividing coarse particles of pulp into fine fibres thus keeping the length of the fibre.

SOLE AGENT:

C. S. CHRISTENSEN,

CHRISTIANIA, NORWAY.

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The Böhnsdalen Wood Pulp and Paper Mills, Ltd., Bön, Norway.
Kongsberg Træmassefabrik, Kongsberg, Norway.
Aktieselskabet Akerselven Embretsfos, Christiania, Norway.
Egelands Verk, Risör, Norway.
Mr. Jan H. Fasmer, Bergen, Norway.
Dejefors Saagverk, Dejefors, Sweden.
Hellefors Bruks Aktiebolag, Hellefors, Sweden.
Aktiebolaget Rämen-Liljendahl, Sweden.
Vansbro Træmassefabriks Aktiebolag, Sweden.
Messrs. Hammaren & Co., Tammerfors, Sweden.
Myllykoski Träsliperi, Myllykoski, Finland.
Aktiebolaget Walkiakoski, Walkiakoski, Finland.

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Telephone: No. 5127.

SNOWDON, SONS & Co., LTD., MILLWALL, LONDON, E.

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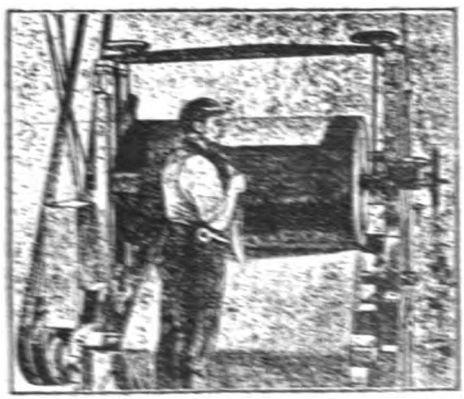
Tannery, Bamford-road, Ipswich: leather belting makers.—1st March, 1897.

CROWN POINT PRINTING WORKS.

302,851. Class 39. Paper (except paper hangings), stationery, and bookbinding. Alf Cooke, Crown Point Printing Works, Hunslet-road, Leeds: colour printer.—4th March, 1897.



[illegible] Class 39. [illegible] Wood Mill, Wood Mill Lane, Holmfirth, Yorkshire: [illegible] 4th March, 1897.

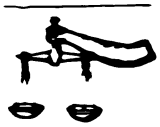
[illegible] Class 39. [illegible] Bamford-road, Ipswich: leather belting makers. 4th March, 1897.

'ERBRIAN'

301,084. Class 39. Carbon paper. The New Supplies Co., Limited, 1A, Paternoster-row, London: manufacturers and general merchants.—8th January, 1897.

Idolina

198,619. Class 39. Paper (except paper hangings), stationery, and bookbinding. Siegmund Strauss, Jr., 4, Topfengasse, Frankfurt-a-Main, Germany: lace merchant.—12th October, 1896. Address for service in the United Kingdom, Hüttenbach and Co., 4, Fenchurch-avenue, London, E.C.



[illegible] Class 37. Leather machine [illegible] John Thompson, William Henry Thompson, and Charles Frank Thompson, trading as [illegible] Stone Mill, Normanby Bridge, Yorkshire: [illegible] and manufacturers of [illegible] leather belting.—31st [illegible]

MEDOVA.

[illegible] Class 5. Paper except paper [illegible] stationery, and bookbinding. [illegible] Lavery-street, Birmingham, Warwickshire: [illegible] merchants. [illegible]

DARCO

[illegible] Class 5. Powders rendered [illegible] which may be used [illegible] writing or [illegible] cases or [illegible] being [illegible] hygienic [illegible] impregnated papers. [illegible] Spring [illegible] paper makers. 18th [illegible]

VISPAH FIBRE LEATHER

[illegible] leather. [illegible] 91, [illegible] manufac[illegible]

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MULTIPHASE MOTORS SUPERSEDE ALL OTHERS

OUR PIONEER

MULTIPHASE INSTALLATIONS

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	Cm.	Inches	Mark	£ s.	Mark	£ s.	Mark	£ s.	Mark	£ s.	Mark	£ s.
A B..	50	19⅞	425	21 5	550	27 10	150	7 10	100	5 0	80	4 0
A Ba.	55	21⅝	485	24 5	610	30 10	160	8 0	105	5 5	80	4 0
A C..	60	23⅝	575	28 15	700	35 0	175	8 15	110	5 10	85	4 5
A Ca.	65	25⅝	650	32 10	775	38 15	185	9 5	115	5 15	85	4 5
A D..	71	28	750	37 0	865	43 5	200	10 0	120	6 0	90	4 10
A Da.	76	30	825	41 5	950	47 10	220	11 0	125	6 5	90	4 10
A E..	83	32⅝	950	47 10	1,075	53 15	240	12 0	125	6 5	95	4 15
A Ea.	91	35⅞	1,050	52 10	1,175	58 15	250	12 10	130	6 10	95	4 15
A F..	95	37⅜	1,150	57 10	1,275	63 15	260	13 0	135	6 15	100	5 0
A Fa.	100	39⅜	1,250	62 10	1,375	68 15	280	14 0	140	7 0	100	5 0
A G..	108	42	1,400	70 0	1,525	76 5	315	15 15	145	7 5	105	5 5
A Ga.	113	44½	1,500	75 0	1,625	81 5	325	16 5	150	7 10	105	5 5
A H..	120	47¼	1,600	80 0	1,725	86 5	340	17 0	155	7 15	110	5 10
A Ha.	140	55	1,950	97 10	2,075	103 5	365	18 5	160	8 0	115	5 15
A I ..	160	63	2,275	113 15	2,400	120 0	390	19 0	160	8 0	120	6 0
A Z ..	210	82⅝	—		4,900	245 0	500	25 0	200	10 0	—	—

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Karl Krause, Leipzig
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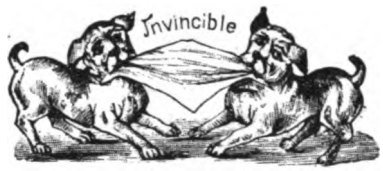

207,528. Class 39. Wrapping Paper. The firm trading as The Cellulose-Fabrik Feldmühle, Hafenstrasse, Cosel, Upper Silesia, Germany; manufacturers of cellulose and paper.—10th September, 1897. Address for service in the United Kingdom, c/o W. P. Thompson and Co., 6, Lord-street, Liverpool.

207,488. Class 50. A luggage or cycle label or tag, of which the predominating material is celluloid, or other like material not covered by any other class. Thomas Ryan, junr., Castle Hill House, Flint, North Wales; gentleman; and John Wilson Owen, 18, Chester-street, Flint, North Wales; gentleman.—9th September, 1897.

VISPAH.

206,985. Class 39. Paper (except paper hangings), stationery, and bookbinding. The Fibre Leather Company, Limited, 91, Queen Victoria-street, London; manufacturers.—18th August, 1897.

CREDELDERE.

208,070. Class 39. Paper (except paper hangings), stationery, and bookbinding. Thomas Francis Myers, 2, Devonshire-terrace, Bradford, Yorkshire; insurance manager.—1st October, 1897.

208,198. Class 39. Prepared paper for photographic purposes, stationery (not including pens and not including any goods of a like kind to pens), and bookbinding. The Britannia Works Company, Limited, (registered office) The Britannia Works, Ilford, Essex; photographic ·terial manufacturers.—6th October,

THE "LUNAR" ENVELOPE

208,154. Class 39. Envelopes. Reynolds and Branson, 13, Briggate, Leeds; pharmaceutical chemists and surgical and medical apparatus manufacturers.—5th October, 1897.

208,539. Class 39. Blotting paper. John Dickinson and Co., Limited, 65, Old Bailey, London; paper manufacturers.—20th October, 1897.

202,008. Class 37. Leather belting for Machinery. George Thompson, John Thompson, William Henry Thompson, and Charles Edwin Thompson, trading as George Thompson and Sons, Stone Mill Tannery, Sowerby Bridge, Yorkshire; tanners, curriers, and manufacturers of single and double leather belting.—6th February, 1897.

206,438. Class 35. Machine belting made of camel hair. Robert Stevenson and Brother, 88, Bindloss Chambers, 4, Chapel-walks, Cross-street, Manchester; merchants.—21st July, 1897.

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CAFFERATA & Co., Newark-upon-Trent.

HOWE, John & Co., Carlisle.

WINSER & Co., Kegworth Mills, near Derby, and Harter Street, Manchester. Also importers of China Clay.

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MULLER, A. E., 9, Fenchurch Street, London, E.C.

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GRANT, W. & Co., 17, Baltic Street, Leith. Agents for best shippers, Sulphite and Sulphate, Mechanical, Pine, Brown, Aspen.

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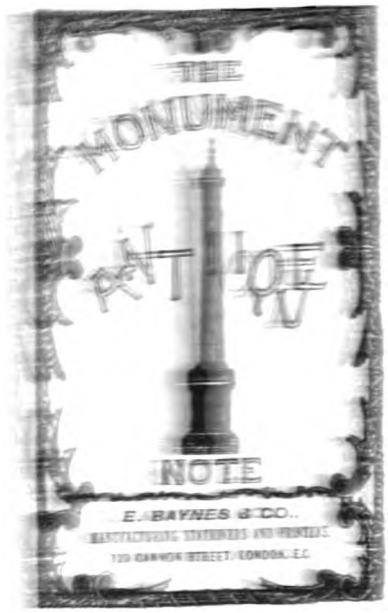

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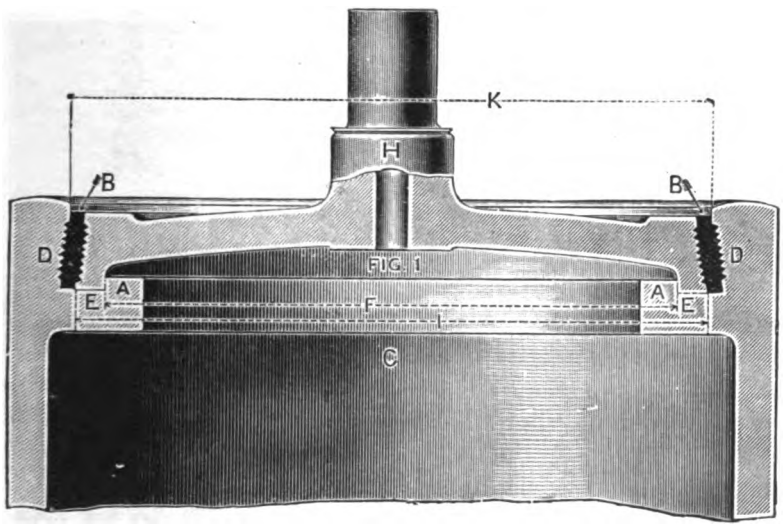

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The World's Paper Trade Review

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Papermakers' Raw Materials.

Features and Fluctuations of the Markets During 1897.

NOTES ON THE OUTLOOK.

In compiling a review of the movements in papermakers' raw materials during 1897, it is encouraging to note that the demand for wood pulp, esparto, and rags was on a larger scale than in previous years, which points to the fact that papermakers have been called upon to increase their production. This is highly satisfactory, as there can be no doubt that the consumption of paper in Great Britain has greatly increased of late years, and if the British manufacturer does not set out to meet the requirements of the home market, the foreign manufacturer is only too ready to do so. Last year, for instance, the imports of foreign paper was of the total value of £3,481,114, against £3,138,438 in 1896.

WOOD PULPS.

The demand for wood pulp is now on a very extensive scale, the arrivals during 1897 amounting to 388,204 tons, compared with 327,080 tons in 1896, and 207,095 tons in 1895. The official classification does not distinguish chemical from mechanical, and therefore we are only able to give total quantities.

Imports.

The following were the imports during the twelve months of 1897, and the previous year:—

	1896. Tons.	1897. Tons.	Increase or Decrease.
January ...	21,170	38,035	+ 16,865
February ...	25,326	24,629	– 697
March	19,575	25,855	+ 6,280
April	24,197	25,610	+ 1,413
May	29,304	34,318	+ 5,014
June	27,180	37,388	+ 10,208
July	35,379	28,510	– 6,869
August ...	25,025	35,864	+ 10,839
September ...	28,912	26,804	– 2,108
October ...	30,588	33,474	+ 2,886
November ...	25,851	39,403	+ 13,552
December ...	35,573	38,314	+ 2,741
Totals	327,080	388,204	61,124

The arrivals in February, July, and September do not compare favourably with the corresponding months of the previous year, but the other months show a big increase. The total value of the imports in 1897 was £1,939,367, compared with £1,684,647 in 1896 and £1,574,302 in 1895.

Countries Exporting to Great Britain.

Scandinavian pulp enjoys quite a monopoly in the British market, but during the

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past year competition, which is likely to become more acute, has been met with from American and Canadian mills. The monthly official figures simply give the supplies from "Norway" and "other countries." The imports during the year from Norway reached 239,133 tons of the value of £983,479, compared with 205,677 tons and £804,064 in 1896. The quantity from "other countries"—including Sweden, Canada, United States, etc.—in 1897 was 149,071 tons of the value of £955,888, compared with 121,403 tons and £790,583 in the previous year. As before stated, the bulk of wood pulp imported comes from Scandinavia, the value—according to the last available year's figures—amounting to about 88 per cent. of the total amount. The following list shows the principal countries exporting wood pulp to Great Britain:—

Norway	205,677 tons	£804,264
Sweden	94,917 ,,	591,497
Russia	6,635 ,,	34,630
Holland	5,239 ,,	49,382
Germany... ...	4,379 ,,	36,869
Belgium	2,923 ,,	28,858
Canada	2,714 ,,	9,370
Portugal... ...	1,447 ,,	11,680
Austria	1,162 ,,	9,903
Denmark... ...	1,130 ,,	10,839
United States ...	847 ,,	7,266
Italy	10 ,,	80
Total ...	327,080 tons	£1,684,647

It will be seen from the above figures, which deal with the year 1896, that Canada and the United States exported very little wood pulp, comparatively, to this country, but no doubt when the statistics for 1897 are available the position of the countries mentioned will be greatly improved. In reviewing the various qualities we will first take

Sulphite.

Sulphite pulp continued in good demand and increased consumption during the whole of 1897. Most buyers had covered their wants for at least a portion of the year before prices rose to the level afterwards attained, but later contracts were all at higher prices. At the outset bleached sulphite stood at £11 10s. to £13, and unbleached £7 10s. to £10, with every indication of an upward movement. Owing to the small quantities on offer prices went up 5s. The market remaining firm, buyers delayed placing orders in the hope of a reduction later on, but in this they were disappointed, as it appeared that consumption was quite equal to production. In the summer contracts were reported for 1898 at higher prices, but about August the market was rather dull, and small lots of Canadian and American sulphite were received at British ports at lower prices than those ruling for the Scandinavian pulp. The trial lots of American sulphite were reported to be highly satisfactory to the users, and according to advices from Bangor, English papermakers have interested themselves in sulphite mills located at Lincoln and Montague, on the Penobscot, with the view of importing the whole of the production. Latterly several large cargoes of pulp have been received at Manchester from Bangor. Towards the close of the year the market was quiet, but prices, although they had a tendency to droop, did not give way. For some months yet values will be fairly firm, but eventually, when the product of the new mills is placed on the market, and as the newly-formed Sulphite Manufacturers' Association of the United States announce their intention to export their surplus product to Europe, a drop no doubt will take place. The present quotation for bleached sulphite is £11 5s. to £12 15s., and unbleached £8 5s. to £10 15s.

Soda.

After a long period of depression, the manufacturers of soda pulp, at the beginning of 1897, made a bid for higher prices. The ruling quotations were from £7 5s. to £8 10s. for unbleached, and £10 to £12 for bleached. A scarcity was reported, and this greatly favoured soda pulp makers, particularly as consumption appeared to be on the increase. The Scandinavians feared that higher prices would lead to the shipment to Europe of American soda, but the arrivals from that country were almost *nil*. For good qualities £8 and upwards were obtained, and papermakers commenced to grumble, and threatened to give more attention to the use of esparto. During April and following months soda was scarce, and spot parcels fetched high figures. The Bamble Mills, Norway, with an annual production of about 4,000 tons, having shut down, the market continued firm. As there was a fair German demand quotations submitted to British buyers were well maintained. During the summer months North American competition was talked about, but Scandinavian manufacturers maintained their stand and asked £8 7s. 6d. Business transactions, however, showed that a lower range of values ruled in some instances. By the autumn mills were well sold, and the price quoted for 1898 was about £8 10s. Undoubtedly the consumption of soda pulps has greatly increased, and with the close of the year the demand was extremely good, most mills reporting that they had disposed of their production. Present quotations for unbleached are about £7 17s. 6d. to £8 5s., an advance of 10s. to 12s. 6d., compared with the early part of 1897.

Mechanical.

At the beginning of the year Scandinavian manufacturers of mechanical wood pulp were very firm in their quotations, dry pine being quoted c.i.f. at £4 2s. 6d. to £4 10s., and pine 50 per cent. air dry at £2 2s. 6d. to £2 5s. Strong efforts were made to push prices up, the reason given being that the higher prices of wood increased cost of production. Papermakers, however, held aloof, the majority being well-contracted ahead, and there were offers upon the market of Canadian pulp which compared favourably, quality considered, with the Scandinavian product. During February there was very little pulp for prompt shipment, and makers

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succeeded in obtaining higher rates. The Scandinavians then succeeded in sending up prices to £4 5s. for dry pine and £2 5s. for moist, and as a further advance was anticipated sales were not pressed. Large Trans-Atlantic arrivals at British ports were announced about April, and the calculations of Scandinavian manufacturers were somewhat upset. The market, on the whole, remained firm, and an increase of 2s. 6d. was obtained for some qualities of dry pine. The competition, however, of the United States and Canada began to be felt, and thousands of bales were imported into Great Britain during the summer months. The Scandinavians, notwithstanding, seemed determined to maintain their prices, and as they were fairly well sold forward, some very extravagant views were held. British papermakers were opposed to the exorbitant figures quoted them, and therefore bought the Canadian product. The market eased somewhat in September and October, the Scandinavians regarding Canadian and American competition in a more serious light, and more disposition was shown to meet the views of buyers. As a matter of fact, during the autumn Canadian pulp was pressed, and being of good quality, it took in many instances the place of Norwegian, and contracts which formerly went to Norway have for 1898 in a great measure gone to Canada. The market at the close of the year was without any movement of importance, the Scandinavian makers on the whole being firm in their quotations.

Scandinavian Prices and Trans-Atlantic Competition.

A correspondent writes:—"The most important feature in the wood pulp trade, especially in mechanical, throughout 1897 has been the attempt on the part of the Scandinavian manufacturers to see how far they could drive up the prices, an attempt which to all practical intents and purposes has been frustrated by the Canadian as well as the American manufacturers having obtained a strong foothold on the English market, especially as the pulp is found to be a finer quality, and works more satisfactory into paper. The keynote to this supposition was struck at the annual dinner of the British Wood Pulp Association, held in October last. The views expressed at that time have had in a marked degree their effect upon the disposition of the Swedish and Norwegian manufacturers to treat the English papermakers with more consideration, as evidently they found they had driven the prices up sufficiently high to divert trade from Scandinavia to the American continent, as now they seem anxious to arrange contracts for 1898 considerably below the prices demanded when first our English papermakers showed a disposition to cover their requirements for 1898, and now first quality wood pulp can be bought at £4 10s. for dry, and £2 7s. 6d. for moist, for forward delivery; but our impression is that even these prices will not hold good after May or June next, and the average price, in our opinion, will be £4 7s. 6d. for dry, and £2 5s. for moist. No doubt some dozen mills which are in course of erection, and in contemplation to be erected, will have a further influence on the prices."

Scandinavia v. Canada.

Higher prices, and the firm attitude of Scandinavian manufacturers, no doubt led British consumers to take advantage of the offers of Canadian pulp. It must be admitted that Canadian trade has been developed amazingly during the past year, and London and provincial firms of wood pulp merchants have been and are still actively identified with the business. The Scandinavians are in an excellent position to hold their own when prices are at a certain level, but when rates are high, then the Canadians step in. At one time the impression was generally held in Norway and Sweden that Canadian mills could not successfully compete, but this erroneous idea has now been removed by investigations on the spot, and no better evidence is required than the shiploads of wood pulp that have been received at British ports from North America during last year. The enquiries that have been made for Canadian wood pulp have elicited the interest of lumber men in the wood pulp industry, and it is proposed to erect several mills with the view of exporting the product to Great Britain. Several companies have been formed during the past year, with British capital, to engage in the manufacture of wood pulp in Canada, and several schemes are now being matured which will appeal in due course for capital in this country or in the States. The Canadians undoubtedly are jealous of the Scandinavians monopolising nearly the whole of the custom of the British papermaker, and, proud of their resources, they appear determined to use every effort to acquire a portion of the trade. Will they succeed? This question has been asked by the Scandinavians, and the Consul of Norway and Sweden at Quebec was some months ago instructed to report upon the subject. He admitted that the Sault Ste. Marie mill, the Laurentide Co.'s mill, and mills located in Nova Scotia and New Brunswick, could compete advantageously with Scandinavian mills, but on the whole he did not think there was any likelihood of serious competition in pulp, but, on the other hand, there might be in paper. Several of the pulp mills, however, have cultivated an export trade, and one concern drys its product by electricity, the percentage being 90-92 dry, thus saving in cost of freight. Judging from the negotiations now pending there is reason to believe that the exportation of Canadian pulp to Great Britain will continue to expand. Large sales have already been made in the Lancashire district, and people who have visited Canadian mills, and profess to know what they are talking about, state that in view of Trans-Atlantic competition, and new mills in course of construction both in Canada and Scandinavia, manufacturers in Norway and Sweden will have to quote lower prices if they wish to keep their business relations with British papermakers. The Scandinavians complain that the low

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for papermaking purposes would be narrowed down very considerably. Paper stock merchants, however, state that the demand compares favourably with previous years, and that prices on the whole are regarded as satisfactory. More attention is given to the sorting of the various grades, a feature highly appreciated by first-class mills.

Exports.

There has been a good demand for export. The following are the figures for each month during 1896 and 1897:—

	1896. Tons.	1897. Tons.		Increase or Decrease.
January ...	4,269	4,708	+	439
February ...	4,479	2,681	—	1,798
March ...	5,147	4,697	—	450
April ...	4,012	4,432	+	420
May ...	4,943	4,451	—	492
June ...	4,015	4,288	+	273
July ...	4,602	5,533	+	931
August ...	3,647	4,396	+	749
September.	4,683	4,459	—	224
October ..	4,660	5,718	+	1,058
November.	3,965	6,421	+	2,456
December..	4,525	5,849	+	1,324
Totals ...	53,001	57,633	+	4,632

The total value of the exports during 1897 was £299,320, and in 1896, £287,248.

Shipments to New York.

The exports from Great Britain to New York during the year were as under:—

	Rags. Bales.	Old Papers. Bales.	Manilla Bales.	Stock. Coils.
Bristol... ...	—	—	3,940	1,786
Dublin... ...	508	—	—	—
Dundee ...	—	—	4,311	339
Glasgow ...	217	1,353	1,052	—
Hull	8,456	397	8,431	3,090
Leith	32	—	519	229
Liverpool ...	1,864	209	6,501	1,966
London ...	8,135	2,970	7,143	1,030
Newcastle ...	24	—	1,458	1,189

The Principal Centres

of the British rag trade report that the demand during 1897 was very steady. It appears that the rule of late years has been a brisk demand during the winter months, followed by a slack summer season, allowing stocks to accumulate only to be worked off during the ensuing winter. The past year, however, was somewhat an exception to the rule, as stocks passed off as collected. The even demand kept prices without any material fluctuation, and they stand to-day practically the same as at the end of 1896.

FOREIGN RAGS.

A few years back there were many people who predicted a lingering but certain death to the continental rag trade; on the other hand there were paper stock merchants who were not alarmed at the introduction of wood pulp and other papermaking materials, but felt that there would always be a demand for rags in the production of better grades of paper. The latter view has evidently been substantiated, as recent reports from the Continent indicate that the rag trade is in a very healthy condition. The shipments to Great Britain are also on a fairly large scale.

British Imports.

The following are the figures showing the imports each month into Great Britain during 1897, and the preceding year:—

	1896. Tons.	1897. Tons.		Increase or Decrease.
January	1,748	2,828	+	1,080
February	1,708	1,789	+	81
March	2,630	2,069	—	561
April	1,739	1,873	+	134
May	1,893	2,912	+	1,019
June	1,866	1,984	+	118
July	1,259	1,879	+	620
August	1,562	2,278	+	716
September ...	1,092	1,925	+	833
October	1,579	1,809	+	230
November ...	1,565	2,176	+	611
December ...	2,414	1,711	—	703
Totals ...	21,055	25,233	+	4,178

The total value of the rags imported during 1897 amounts to £249,631, compared with £206,772 in 1896.

Shipments to New York.

The following were the shipments at various ports to New York from January to the end of December last year:—

	Rags. Bales.	Old papers. Bales.	Manilla Bales.	Stock. Coils.
Antwerp ...	12,919	56	17,132	229
Amsterdam ...	483	—	268	—
Barcelona ...	—	—	673	—
Bordeaux ...	3,272	—	—	—
Bremen	4,380	—	5,612	—
Buenos Ayres	45	—	—	—
Calais	143	—	—	—
Calcutta	-	—	10,514	595
Catania	100	—	—	—
Christiania ...	413	—	1,456	—
Cen. America	62	—	—	—
Colon	75	—	—	—
Copenhagen ...	872	—	976	212
Dunkirk	256	—	469	—
Genoa	677	174	5,281	—
Gothenburg ...	192	—	647	—
Hamburg ...	11,621	276	6,710	—
Havre	109	—	1,528	—
Kobe...	5,365	—	—	—
Leghorn	4,458	—	1,295	-
Lisbon	53	—	—	-
Maracaibo ...	—	—	85	-
Marseilles ...	607	—	574	90
Rotterdam ...	6,190	—	2,690	123
Stettin	9,189	—	655	—

Market Movements

Better classes of rags were in good demand during the year owing to the active state of the paper trade, and to higher prices of wood pulp. A great advantage to shippers was the freight competition between rival steamship companies, which resulted in low rates. Rag merchants are highly pleased at the action of various governments on the Continent in enforcing the use of paper from rags for the use of official documents. The small collectors had a profitable year.

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Cotton and linen rags moved off as soon as they were collected. Bagging has been neglected, it not being a favourite article now for the States, and consequently stocks have accumulated. At those ports, however, where freight competition existed, some big lots were shipped. All descriptions of hemp ropes sell well, whilst manilla rope is slack. Paper shavings are saleable, but it is difficult to fix prices. Shavings guaranteed free from wood fetch comparatively high figures. Books and pamphlets find a ready sale. A good demand from the States is reported, and the outlook is regarded as highly favourable. Contracts are reported to have been made at the highest prices ruling during 1897.

Comparative Prices.

Values during the past year have been upward, and the following comparative general figures show the extent of the advance (prices are all f.o.r. different ports, or delivered according to freight):—

	1896.	1897.
Fine cottons	£12 10 0	£14 0 0
2nd. do.	8 13 0	9 13 0
3rd. do.	5 13 0	6 13 0
Fine do.	4 13 0	5 5 0
Light & blues prints	7 0 0	7 5 0
Coloured do.	2 13 0	3 3 0
Black cottons	2 0 0	2 2 6
Flannels	3 5 0	3 12 6
Hessian cuts	3 0 0	3 10 0
Sewing grey [illegible]	8 10 0	9 15 0
[illegible] grey [illegible]	5 0 0	6 0 0
[illegible]	9 0 0	9 0 0
Cotton waste [illegible]	— — —	3 0 0
Cotton rope or thick [illegible]	5 0 0	5 7 6
Mixed hessian	2 15 0	2 12 6
Second rope & cords	7 15 0	8 15 0
Navy & Bolton rope	5 10 0	5 10 0
White manilla	7 0 0	6 5 0
Brown do.	5 0 0	4 10 0
White paper shavings free of wood	10 0 0	10 0 0
White paper shavings free guaranteed free of wood	8 15 0	8 15 0
Books and pamphlets	3 0 0	3 5 0
White paper cuttings	1 10 0	1 10 0
Printers' waste do.	12 6	12 6

STRAW & STRAW PULP.

Some owners of [illegible] mills in England and Scotland [illegible]

Straw.

[illegible] supply of straw has [illegible] wheat and oat straw being about 42s. 6d. c.i.f. London, and about 40s. f.o.r. Goole. At the present time there is more doing in France in straw for papermakers than in the United Kingdom.

Straw Pulps.

A moderate demand has been experienced for straw pulp during the past year, although manufacturers find that the appreciation of British consumers is not so marked as that of their continental brethren. Straw pulp is claimed to be well adapted for the manufacture of the finest grades of paper, imparting characteristics not obtainable with other fibres. The supplies to the British market are chiefly for Scottish consumption. Prices have kept steady, there being very little change. German dry (No. 1) is quoted at £14, and (No. 2) £13, c.i.f. London, Hull or Leith. Mills have increased production during the past year.

CHEMICALS.

The production of alkali during 1897 has been in excess of the requirements of users, and consequently at the present time stocks, generally, are heavy, and the trade depressed. It was thought, at the beginning of 1897, with an agreement subsisting between the well-known firms of Brunner, Mond and Co., Ltd., the United Alkali Co., Ltd., and Bowman, Thompson and Co., that prices would go in an upward direction, but owing to the Indian famine, the American tariff legislation, the introduction of new works, and foreign competition, the movement in values has been downward. Much uncertainty prevails as to the future, and prospects certainly are not very bright, with works running short time, and the necessity of lower wages for employees.

Exports of Alkali.

As far as quantity is concerned the exports of alkali during 1897 compare favourably with the previous year:—

	1896. Tons.	1897. Tons.	Increase or Decrease.
January	489,467	327,804	— 141,663
February	340,131	329,668	— 10,363
March	440,380	415,120	— 25,760
April	404,440	477,386	+ 13,536
May	573,364	501,845	— 127,131
June	508,148	440,186	— 71,738
July	551,733	551,991	+ 20,258
August	527,363	579,186	+ 52,823
September	281,221	288,566	+ 7,269
October	447,713	483,861	+ 36,148
November	416,740	472,170	+ 57,390
December	446,554	321,576	— 124,968
Totals	5,441,254	5,576,118	+ 134,818

The value of 1897 exports at £1,258,690 an increase compared with 1896, when the amount was £1,142,73[illegible]

The American Market.

The increase in shipments of alkali to the United States has been very pronounced during recent years. The following figures

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deal with the past three years:—

1897	1,922,050 cwts.	£436,812
1896	2,226,300 ,,	495,912
1895	3,524,400 ,,	769,644

Chemical works are springing up in various localities in the States, the most formidable being the Michigan Alkali Co., at Detroit, turning out 400 tons per week of high strength caustic soda. The United Alkali Co. are moving in the matter of erecting works in the States, Bay City, Mich., and Ecorse, Detroit, being mentioned as likely localities.

Soda Ash.

We now propose to refer to the various fluctuations in the principal materials used by papermakers. Ammonia soda ash, 58 per cent., stood at £3 5s. to £3 15s. in January; and carbonated, 58 per cent., £4 10s. to £4 15s.; and caustic, 57-58 per cent., £4 15s. to £5 f.o.b. Liverpool. During the first two months the chemical market was not very active, but in March the principal manufacturers made certain arrangements, and these developments led to a firmer tone, ammonia being advanced 10s., and carbonated and caustic 5s. per ton. There was a good demand in April and May, and owing to an agreement between English and foreign manufacturers, ammonia soda ash for continental markets was advanced in price. During July the market kept steady, and in the following months soda ash was in better request and quotations were exceedingly firm. Makers appear to have been well sold, and about October orders for some markets were declined. The prices ruling were ammonia, 58 per cent., £4 5s. to £4 10s.; carbonated, 58 per cent., £4 10s. to £4 15s.; and caustic, 57 to 58 per cent., £4 15s. to £5. At the close of the year a scarcity was reported, especially for the Le Blanc qualities.

Bleach.

The year opened with a good demand for bleach, particularly for export, soft wood being quoted £6 10s. to £6 17s. 6d., and hardwood £6 12s. 6d. to £7 f.o.b. Liverpool. The market was quiet about March, but prices remained steady. There was not much movement during the summer months, quotations being lower by 2s. 6d. An improvement in the demand set in about September, and prices remained steady. The market since then has been very weak, owing to competition, quotations being as low as £5 10s. for soft wood, whilst the electrolytic product has been on offer at £5 5s. to £5 2s. 6d. per ton f.o.r. at works. The exports of "bleaching materials" during 1897 amounted to 1,169,351 cwts., of the value of £371,480, and of this quantity 749,636 cwts., of the value of £235,417, represented the shipments to the United States. In 1896 the total exports were 1,188,400 cwts,, of the value of £406,486, including 744,200 cwts., of the value of £253,736 dispatched to the States.

Caustic Soda.

There has been a steady business in caustic soda during the year, and prices have been without any noteworthy fluctuation. White 70 per cent. was quoted at £7 2s. 6d. f.o.b. Liverpool in January, and in March there was an upward tendency. The demand being good, higher prices were obtainable in some cases, notably for continental markets. There was very little change during the summer months. There was considerable activity in August, and export prices showed an advance all round, white 70 per cent. standing at £7 5s. A quieter tone prevailed during the latter part of September, but values on the whole were well maintained. The year closed rather quiet, quotations showing very little difference to those current twelvemonths ago.

Soda Crystals.

Soda crystals were quiet during the first two months of the year, the quotation being £2 7s. 6d. f.o.b. Liverpool. In March there was an advance of 10s. per ton. There was a good demand during the following months, but in August the tone of the market was easier, and prices gave way 7s. 6d. An upward movement took place at the latter end of October, the quotation for some markets being £2 15s.

Sulphate of Alumina, etc.

The demand for the best and purest qualities of sulphate of alumina has been fairly good and regular during the whole of the year, but prices have been forced down still further, owing to reckless continental competition. Amongst other materials we may mention that a steady and good demand has prevailed for blanc fixie throughout the whole of the year, an increase during the later months being noticeable. Price remains very low, but the extra demand for coated papers points to better prices in the near future. Salt cake has kept steady. Sulphur (recovered) stood at £4 15s. in January, the price during the latter part of the year being £5.

FOREIGN CHEMICALS.

Foreign chemicals are being steadily pushed amongst papermakers in this country. It is evident, in spite of the general decline in prices, that the principal German makers are still able to compete in the British market.

Imports of Alkali.

The following figures, supplied by the Board of Trade, show the imports of alkali during each month of 1897 and the previous year:—

	1896. cwts.	1897. cwts.	Increase or Decrease.
January ...	8,977	25,237	+ 16,260
February ...	5,869	13,775	+ 7,906
March	17,100	17,514	+ 414
April	16,742	11,581	— 5,161
May	18,134	25,343	+ 7,209
June	18,715	28,325	÷ 9,610
July	8,477	18,658	+ 10,181
August ...	18,474	18,496	+ 22
September ...	10,238	14,483	+ 4,245
October ...	12,024	14,416	+ 2,392
November ...	14,652	16,401	+ 1,749
December ...	26,754	23,265	— 3,489
Totals ...	176,156	227,494	+ 51,338

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The total value of the imports during 1897 was £109,002, compared with £96,130 in 1896.

58 Per Cent. Alkali.

The recent advance of 10s. per ton has not as yet tempted continental makers outside the syndicate to ship any to this country, neither have we heard of any imports of continental caustic soda.

Bleaching Powder.

The relative high prices which were obtainable in Great Britain during the early part of 1897 induced continental manufacturers to reserve a larger portion than usual of their production for this market, and in spite of the continental decline in values the imports have steadily increased. It appears that even with the reduced margin of profit, we may still expect to receive large consignments from abroad.

Hypo-Sulphite of Soda.

The new competitors who appeared on the market evidently did not find prices sufficiently remunerative, as we understand that some works have discontinued making hypo-sulphite of soda. Only the large manufacturers who obtain considerable quantities as a bye-product can continue to sell at present prices with a small profit, and we should not be surprised to see an improvement take place at an early date.

Sulphate of Alumina, etc.

Prices of sulphate of alumina have receded to such a low level that many papermakers have found it more economical to use a first-class quality only. The demand for lump alum has been steady, and prices remain unchanged.

ELECTROLYSIS.

In the development of electrolysis for the production of bleach and caustic, old names, as inventors and patentees, disappear, and new ones take their place. It is questionable whether papermakers are so much interested in electrolytic methods as formerly. The idea at one time was to install plant in their mills, in order to be independent of market fluctuations. When

Greenwood's Process

(seldom heard of at the present time) was before the trade, papermakers were greatly impressed with the likely value of electrolysis. Progress, however, was very disappointing, and as rival processes were introduced, a waiting policy was certainly a safe one for papermakers to adopt. However, a number of the leading men in the trade were favourably impressed with the claims put forward on behalf of the Holland-Richardson process, and subsequently identified themselves with the

Electro-Chemical Co., Ltd.

The works of this company are situated at St. Helens, and operations have been going on for some time, with—according to the views of Col. Holland, C.B.—satisfactory results. We cannot say the quantity of the products produced electrolytically per week, and the officials of the company are rather reticent on the matter. The most prominent concern before the public at the present time is the

Castner-Kellner Alkali Co., Ltd.,

which started operations at Weston Point in April last. Bleaching powder and caustic soda have been offered to the trade, the former (soft wood) being quoted £5 2s. 6d. to £5 5s. f.o.r. Arrangements have been made to largely increase the output. More is likely to be heard of Hargreave's and Bird's process, the patents being centrolled by the

General Electrolytic Parent Co., Ltd.

Large works are in contemplation at Widnes. The process is not one of recent introduction, but has for the past few years been subjected to experimental tests with the view of increasing its efficiency. The latest introduction is Rhodin's process, in connection with which an appeal was recently made to the public for capital by the

Commercial Development Corporation, Ltd.

The patents were boomed by holding an exhibition of a small plant at the Hotel Cecil, to which the press were invited and afterwards entertained to luncheon. It is too early to speak as to the value of Rhodin's patents, or for that matter, other processes. Many will be glad to peruse the various balance sheets when issued, and will then hazard an opinion. There is no doubt that practical electrochemistry is gaining ground, but failures in connection therewith have been many, and much £ s. d. is likely to be still swallowed up. We understand that several electrolytical bleaching plants on

Dr. Kellner's System

have been installed in various paper and cellulose mills on the continent, and enquiries have been made by papermakers in various countries as to the best process it may be advisable to adopt for their own requirements. In the United States a certain amount of headway has been made in developing electrolysis, the most conspicuous in the list of processes being that of

Le Sueur's,

which has been in operation during the past two years at Rumford Falls, Maine. It is claimed that improvements have been effected from time to time, with the result that to-day successful working on a commercial scale cannot be disputed. Negotiations, we are informed, have been pending for the adoption of the Le Sueur process in Japan, India, Norway, and other countries, whilst the British patents are likely to be acquired by parties already identified with the chemical industry.

SIZING.

Business in sizing was active during the greater part of 1897. In the early part of the year raw material was dear, owing to

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scarcity. Glues and size went up in price in consequence, and papermakers not under contract were placed at a disadvantage. During the latter part of the year the market was rather easier, but values did not give way. A good trade is predicted for 1898, with steadily advancing prices, as the raw material is still in short supply.

STARCH.

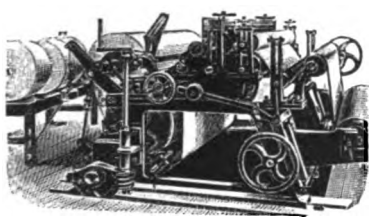
Looking back over the past year we may note that in the beginning the upward tendency of the market which we anticipated in our previous report was realised, the market having risen in sympathy with the somewhat unexpected rise of wheat. Then the short crop of rice due to the heavy drought in India also tended very much to cause holders to ask higher prices for rice. We therefore think the opinion and advice we gave with regard to the recommendation to papermakers to cover their requirements for 1897 was more than justified. The famine having now become a thing of the past, and the reports of the coming wheat crop in the South American States being more favourable, the rice market has become easier, and toward the end of the year quotations for rice went a little lower, as will be shown by the following current quotations:—

Special (in chests) ..	19s. 6d.	per cwt.	net.
Crystal (in bags) ...	18s. 6d.	,,	2½ %
Granulated (in bags)..	17s. 6d.	,,	2½ %
Waste (in bags) ...	13s.	,,	2½ %

The prospect for the coming year is one of comparative quiet, and is not likely to be marked by any violent fluctuations. Current prices will be found to be exceptionally low, and papermakers are recommended, as far as possible, to cover their requirements at existing rates. Maize starch during 1897 reached a very low point, a quantity being imported from America. Since August, however, prices have improved, and, as maize is now higher, better prices are obtained. There has been less fluctuation in Scotch maize starch, the price of maize never justifying the low price at which it was imported from America. It appears perfectly safe to make contracts at present prices. In the early part of the year the price for farina was low, but by Midsummer it rose, and to-day has advanced about £2 per ton from the lowest point, and a further rise is anticipated as there is a short crop of potatoes on the continent.

MINERALS.

The market for minerals kept very steady during 1897, the prices of china clay, French chalk, mineral white, etc., fluctuating only 6d. to 1s. per ton up or down, and most contracts for 1898 have been booked at last year's figures. An even demand prevailed throughout the year. A steady business was transacted in Snowdrift. Sulphur is still controlled by the Anglo-Sicilian Co., prices being firmly maintained. The demand for Lime for papermaking purposes has not varied much compared with previous years.



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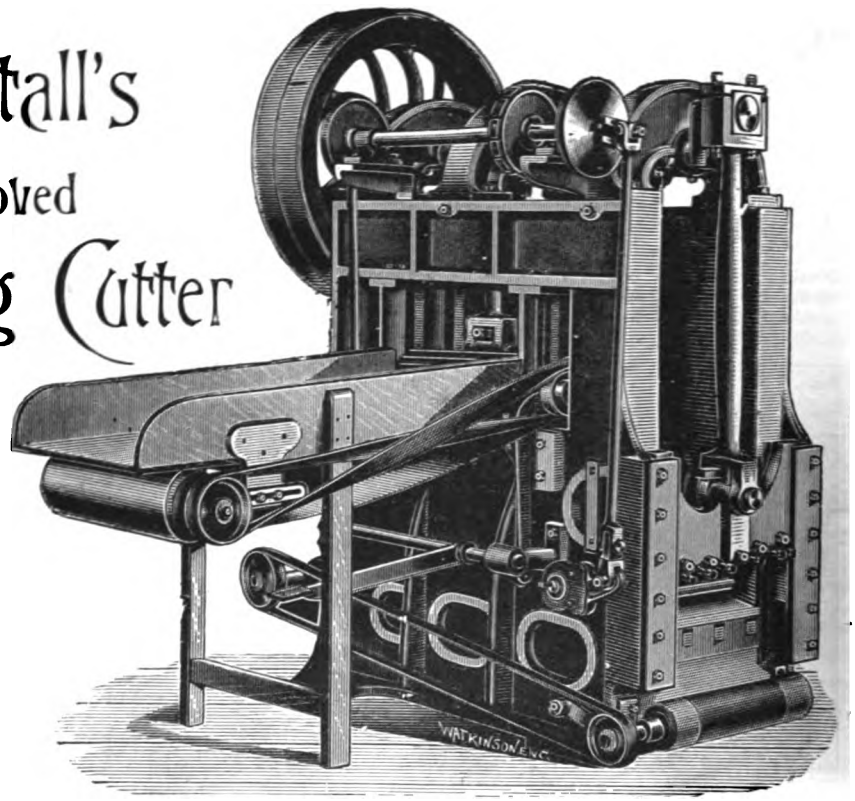

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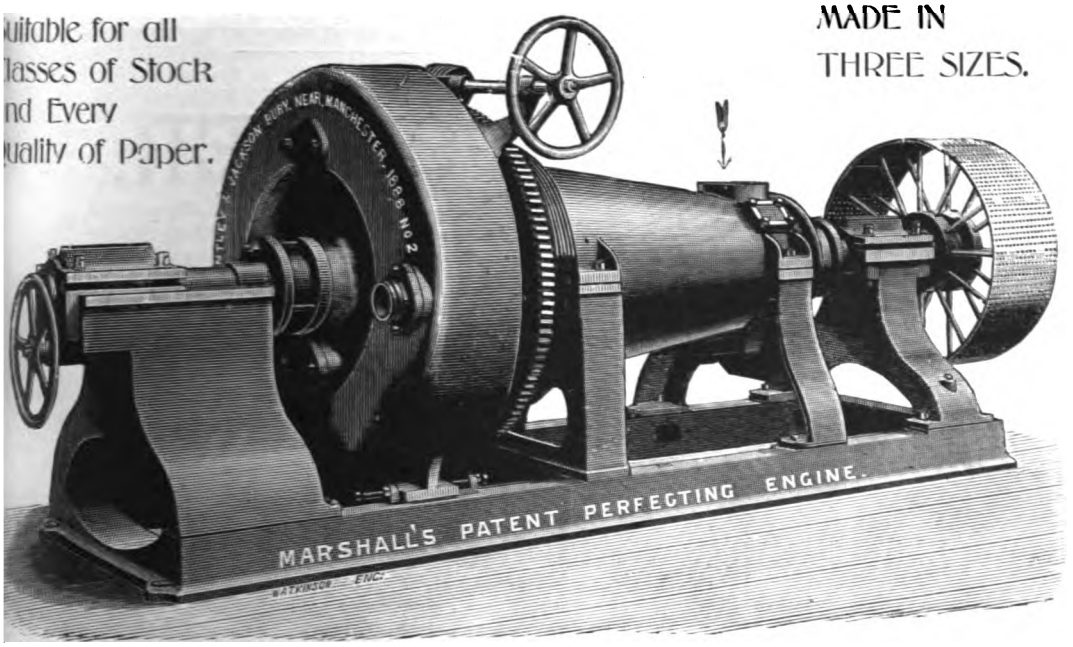

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

RE C. R. BECKETT, trading as Forshaw and Co., paper merchants and agents, 16, Piccadilly, Bradford, Yorks, has been adjudicated bankrupt, and Mr. J. H. Scott, Canada-buildings, Regent-road, Liverpool, has been appointed trustee in the case.

IN the matter of a deed of assignment for the benefit of creditors, executed October 9th, 1897, by E. Hargreaves, trading as Hargreaves and Co., Blackburn-road, Accrington, Lancs., paper merchant: Claims against the debtor should be sent in by February 7th to A. E. Britcliffe, 2, Eagle-street, Accrington, solicitor for the trustee.

RE JOHN HYMAN, 22, Duke-street, Blackfriars, London, S.E., rag merchant.—The trustee in this case, Mr. E. Walters, accountant, of Portugal House, Portugal-street, W.C., was released on the 20th ult. We also understand that Mr. B. Newstead, C.A., of 3, Church-passage, Guildhall, who acted as trustee in re J. G. Turney, of Wooburn Mills, Wooburn, Bucks, millboard manufacturer, was released on the same date.

AMALGAMATION.—The Oldbury Alkali Co. and W. Hunt and Sons, Leabrook Chemical Works, Wednesbury, have arranged a scheme of amalgamation. The new firm will be known as "Chance and Hunt, Ltd." The chemical works at Oldbury have been established over sixty years.

DEATH OF MR. JOHN CRAIG.—Mr. John Craig, late of Dalsholm Paper Mill, died on Thursday, last week, at his residence, Woodend House, Millport. He was over eighty years of age, and had all his manhood been engaged in the trade. His two brothers also followed the same business in other parts of Scotland. In 1877 the deceased gentleman took over the Dalsholm Mill from Messrs. James Macarther and Co., by whose firm the Maryhill Mill was erected at the end of last century, and who were giving up the manufacturing business. With the assistance of his sons, Mr. Craig carried on the mill at Maryhill for eleven or twelve years. During those years he lost his sons, and, in consequence of advancing years, Mr. Craig latterly sold the business to the present proprietor of Dalsholm, Mr. Charles Jebb, and went down to Millport to spend the declining years of his life.

FATAL ACCIDENT AT THE DRIMNAGH PAPER MILL, NEAR DUBLIN.—Michael Kane, aged fourteen, having died from injuries sustained whilst at work at the Drimnagh Paper Mills, an inquest was recently held. From the evidence it appeared that the arm of the deceased was caught between the rollers of the machine. His work was the picking out of impurities in the pulp. According to the medical evidence he died from the effects of exhaustion and syncope. The Coroner, addressing the jury, expressed the opinion that there was nothing in the evidence to show that the usual precautions to obviate such an accident as this had been neglected by the proprietors of the mill. The jury found that the death resulted from injuries accidentally received at the paper mill. They recommended the father of the deceased to the kind consideration of the company.

THE SECOND ANNUAL BANQUET AND BALL of the "Papyrus Lodge" of Freemasons will be held at the Freemasons' Hall, on February 16th, when Masons and their non-masonic friends will be heartily welcome. Applications for tickets should be made to the hon. sec. and treasurer, Mr. Sidney Holt, 46, The Gardens, East Dulwich.

AN OLD PAPERMAKER.—Mr. Thomas Hine, of Eaton Ford, St. Neot's, was last week awarded a silver medal and five-pound note, being the winner of the *Tit-Bits* long service prize for Huntingdonshire. He was born on July 27th, 1812; he is therefore 85 years of age, and went to work at St. Neot's Mills on his birthday in 1824, then in the hands of Messrs. Towgood. He was over 40 years a machine man on the Fourdrinier No. 1 machine, put in there by Bryan Donkin. He has for some years been employed in the finishing room. He still goes to work regularly for the St. Neot's Paper Co., and is in good health, but slightly deaf. He is the father of seven children, and has had 19 grandchildren, and 3 great grandchildren. His father lived the age of 92, and worked at the mills four years previous to his death. His eldest son is a papermaker at Arborfield Mills, near Peterboro.

MR. EMIL HOESCH, of Duren, Rhenish Prussia, has appointed Mr. E. Majer, of 97, Queen Victoria-street, E.C., as his representative.

PRESENTATION TO A PAPERMAKER IN NEW ZEALAND.—Mr. Anthony Keogh, formerly night foreman at Messrs. Wrigley's Bridge Hall Paper Mills, Heap Bridge, who went out about five years ago to take up the management of some paper mills in New Zealand, has completed his engagement in the colony, and is now on his way home again. A copy of the *Mataura Ensign* (published at Gore, in the county of Southland, Otago) is to hand, containing a report of a representative valedictory gathering, the Mayor-elect presiding, at which Mr. Keogh was presented with a purse of gold "as a token of the very high esteem in which he was held, not only in Mataura, but in the neighbourhoods surrounding." Before going to the Mataura Paper Mills he was engaged at the Otago Paper Mills, Woodhaugh. The speakers at the farewell dinner bore testimony to Mr. Keogh's qualities "as a papermaker and a gentleman," his services in developing the papermaking industry of the colony being freely recognised. In acknowledging the toast of his health and the presentation, Mr. Keogh mentioned that he had been a worker in paper mills since he was twelve years old. Knowing what he did about papermaking, he had no fear respect-

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ing his future; "as a matter of fact he believed there was a billet waiting for him at home." He had spent a pleasant time in the colony—had never seen any place he liked better than New Zealand, and had been in no country where he had made more friends.

"THE STRAND MAGAZINE," for January, contains several interesting articles, brightly illustrated. The contribution by Grant Allen on the "Glimpses of Nature," this month is of particular interest to our readers. It deals with wasps, and the author, in an introductory paragraph, says:—"The civilised world could hardly get on nowadays without paper; yet papermaking is, humanly speaking, a very recent invention. It dates, at furtherest, back to the ancient Egyptians. Humanly speaking, I say, not without a set purpose: because man was anticipated as a papermaker by many million of years; long before a human foot trod the earth, there is reason to suppose that ancestral wasps were manufacturing paper, almost as they manufacture it for their nests to-day, amongst the sub-tropical vegetation of an older and warmer Europe. And the wasp is so clever and so many-sided a creature, that to consider him (or more accurately her) in every aspect of life within the space of a few pages would be practically impossible. So it is mainly as a manufacturer and a consumer of paper that I propose to regard our slim-waisted friend in this present article."

A NEW bi-monthly journal for the paper and allied industries has just commenced publication at Paris under the title of *Le Papier*. It will be under the direction of Mons. H. Everling, who is well known locally in connection with the supply of machinery to the trades concerned. From the "programme" printed in the first issue we gather that the new publication mainly aims at fulfilling, on the other side of the Channel, the function which we have for many years past carried out here, *i.e.*, the supply of trade news and articles of an international character.

THE "WINDSOR MAGAZINE" for January is as bright as ever, and the contents fully uphold the excellent reputation this periodical has attained. The frontispiece is "Cycling through the Snow," from a drawing by Lucien Davis, R.I. There is an interview with Sir J. Benjamin Stone, M.P., and some of his remarkable collection of parliamentary photographs are reproduced. Max Pemberton contributes the second instalment of his powerful story, "Kronstadt," and a new introduction is "Jennie Baxter, Journalist," by Cottrel Hoe, a series of contributions likely to prove most attractive. A portrait is given of Dr. Sven Hedin, the Swedish explorer, with an account of his life and travels in the East, and "The Imperial Heritage," is treated by Ernest G. Williams, who pays particular attention to Australasia. There are numerous other contributions, including "Queens of Song: Madame Patey and Madame Christine Nilsson," by F. Klickmann, and hints on dress for ladies.

Wansbrough Paper Co., Ltd.

Mr. W. H. Worrall having seceded from the firm of Wansbrough and Worrall, paper manufacturers of Watchet and Cheddar (as previously announced in these pages), a company has recently been registered to acquire and carry on the business.

The name registered is the Wansbrough Paper Co., Ltd., and the nominal capital is £100,000, in £5 shares (10,000 of which are preference shares).

An agreement has been entered between J. H. Finlayson of the one part and this company of the other part, for the acquisition by purchase or otherwise, as a going concern, of the business of paper manufacturers and merchants as now and hitherto carried on by Alfred Colmer Wansbrough and Partners at Watchet and Cheddar, Somerset, with the leasehold and freehold lands, factories, properties, and premises, on and in which the said business is carried on, with the machinery, plant, stock-in-trade, trade marks, and effects appertaining thereto; to develop and extend the same; and, generally, to carry on in all or any of their respective branches the businesses of manufacturers of and dealers in paper, paper bags, and papermaking materials of every description; to erect and maintain factories, drying houses, warehouses, storehouses, etc., and as company promoters, financiers, and concessionaires," etc., etc.

The following are the signatories to the memorandum of association:—S. Rowe, 8, Bucklersbury, E.C.; R. W. Pitt, 53, Bateman-grove, Cambridge; C. L. Cassin, Mayfield, Catford-hill, S.E.; J. O'Gorman, 17, Upper Woburn-place, Tavistock-square, W.C.; J. H. Cullen, 17, Upper Woburn-place, Tavistock-square, W.C.; G. C. Brightling, 58, Upper Thames-street, E.C.; and R. W. Paterson, 11, Queen Victoria-street, E.C.

The number of directors is to be not more than four; the first are to be nominated by the subscribers. Qualification, £500. Remuneration, half of the net profits, after paying 5½ per cent. on the preference and 7½ per cent. on the ordinary shares, divisible.

IN a review of the German paper trade for 1897, the *Wochenblatt* states that nearly all the larger concerns paid higher dividends, and public companies are quoted at higher premiums on the stock exchange. Many paper and pulpmakers have sold ahead, and are able to look back with satisfaction and also with confidence in regard to the ensuing year.

THE action of the Ontario Government in bringing down a Bill to compel the manufacture into lumber in Canada of all logs cut on Ontario timber limits by Americans and others has given general satisfaction, with the exception, of course, of the United States owners of Canada timber limits. The present licenses do not expire till April 30th next.

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Hunsfos Fabriker	2
Torhator Trämassefabrik...	2
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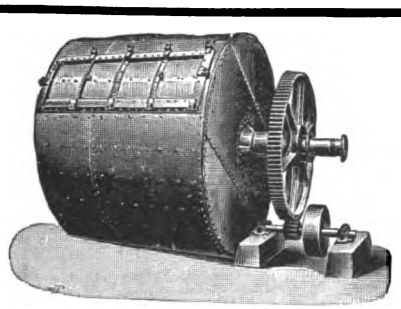

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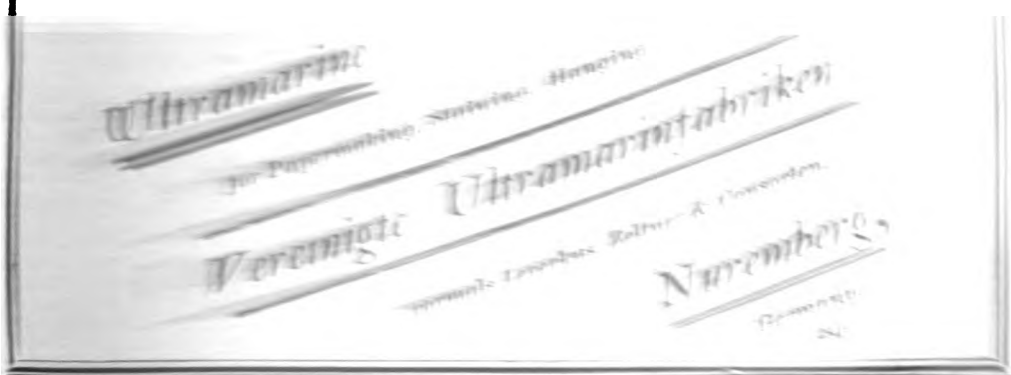

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GERMANY.

HERREN MAX WEISSENBORN AND GUSTAV ADOLPH SIEGAL have taken over the wood pulp and wood pulp board factory at Oberan, near Walkenstein, in Saxony, and will continue it under the firm of Richard Schmidt Nachfolger.

THE VARZINER PAPIER FABRIK is expected to pay a dividend of 12½ per cent.

THE DUSSELDORFER MASCHINEN BAU AKTIEN GESELLSCHAFT VORMALS J. LOSENHAUSEN, in Düsseldorf-Grafenberg, has been converted into a company, with a share capital of 1,000,000 marks.

HERR HERMANN KRUM has taken over the paper mills existing at Göppingen, under the firm of "Göppinger Papier Fabrik, G. Krum."

HERR W. HERZBERG, of the Charlottenberg Office, reports:—News is now made often from mechanical wood pulp alone, or with a slight percentage of other fibres blended with it. There is not much toughness required, only just enough to stand the touch of the rotary printing press. The chief other fibre to give backbone to the more or less weak mechanical pulp is chemical wood pulp, sometimes even straw pulp or rags. From a series of tests it is shown that most of the papers contained only mechanical and a trifling percentage of chemical wood pulp, and nothing else; others as much as from 25 per cent. to 40 per cent. chemical wood pulp. The cases where other fibres were tested were so few that it suffices to say their proportion was smaller than that of chemical wood pulp. Some cases occurred where papers guaranteed not to contain mechanical wood pulp, on a microscopic examination still exhibited some of this forbidden fibre. A manilla paper, guaranteed to be from pure hemp, contained over 40 per cent. chemical wood pulp. So-called rope papers, even of extra quality, are sometimes made chiefly from chemical pulp alone. It is an open question how far the law about unfair competition could be invoked to compel the makers to state the real fibres, because it is generally known that really good chemical pulp papers are called "rope," and this fact being well known in the trade, fraud could not have been contemplated. In any case the examples shown prove the usefulness of frequent tests, which are not yet made as often as they ought to be.

JAPAN.

WONDERFUL progress has been made in developing the papermaking industry in Japan, writes Mr. T. Ayabe, of Tokio. There it still room, however, for a large importation of paper, as the Japanase mills turn out a product of an inferior character at prices comparatively high. The value of the paper imported during 1894 amounted to 688,186 yen; that of 1895 to 818,538 yen; and that of 1896 to 1,494,381 yen. The importation of paper having increased so fast, there is some apprehension on the part of the native paper makers that it will tend to curtail the native industry hereafter. They have begun to consider it a serious matter for them to compete with foreigners. Unfortunately they have a weak point in that their product is inferior in quality. This weakness is due, first, to the shortsightedness of the business men of the country; second, to the want of good engineers and trained workmen; third, to imperfect machines, and fourth, to the lack of good method and management on the part of those who supply the raw material to the paper mills.

UNITED STATES.

THE EXPORTS of paper from New York, according to the last weekly list to hand, included the following:—To London, 3,376 pkgs.; Leith, 11 pkgs.; Liverpool, 252 pkgs.; Manchester, 83 pkgs.; Newcastle, 159 pkgs.; Southampton, 30 pkgs.; Bristol, 49 cases; and Dundee 62 pkgs. The shipments to Bremen included 18 cases; Hamburg, 4 pkgs.; Antwerp, 310 cases; Argentine, 273 cases; Brazil, 124 pkgs.; B. W. Indies, 1,379 pkgs.; Mexico, 173 pkgs.; Newfoundland, 77 cases; and New Zealand, 159 pkgs.

AMERICAN WRITING PAPER IN ENGLAND.—The following item is extracted from an American paper:—It appears that the British Government is actually using American writing paper. All the departments use typewriting paper made in the United States. Her Majesty's Stationery Office, which supplies all the departments, allows common sense to take precedence over patriotism. The India Office, which is the most exclusive and old-fashioned of them all, grumbled upon making the shocking discovery, but one of the chiefs of the Stationery Department answered:—"What's all this fuss about? If we can get notepaper in America better and cheaper than the British manufacturer can supply we will place our orders there."

HEMLOCK PULP WOOD.—Mr. W. H. Brokaw, of the Baukauna Fibre Co., has begun to receive hemlock pulp wood at the yards of his mills. Mr. Brokaw has purchased five thousand or six thousand cords of this kind of wood to make up into pulp. It is stated that it costs only one-half as much as spruce pulp wood, and makes, if anything, a better grade of paper than the spruce, and that the forests of Northern Wisconsin and Michigan will yield for many years all the pulp wood needed by Wisconsin mills before the hemlock is all gone.

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Acetylene Gas.

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—We have read with considerable interest your article on "the determination of colours by artificial light." We quite agree with the writer that acetylene gas is the very best illuminant for that purpose, but we do not agree with many of his remarks upon the apparatus for generating the gas. He states that "the starting of all these apparatus requires a certain knowledge and skill and cannot be entrusted to everybody." Now there is nothing more simple than the generation of acetylene gas from calcium carbide provided the apparatus is constructed on practical lines, and we have the pleasure to send you a drawing showing the construction of our apparatus, which we think you will consider is simple enough for even a domestic servant to handle.

The amount of gas contained by the holder is a fixed quantity, and the amount of gas given off by a pound of calcium carbide is also a fixed quantity; it is therefore only necessary to put so much calcium carbide into the generator as will fill the holder, and this will last for an unlimited time.

All that is necessary to comply with the requirements of the County Council and the insurance offices is that the generator should be 10-ft. away from any insured building.

We shall be pleased to show our apparatus in work to any of your readers, or to send a sample apparatus to any paper mill so that they can test the judging of colours by acetylene gas.

We are quite sure there is a large future before this particular form of apparatus for the above purpose.

Yours truly,
THE WATFORD ENGINEERING WORKS.
January 8th, 1898.

MESSRS. HENDERSON, CRAIG AND SON, LTD., of 97, Queen Victoria-street, London, E.C., are sending out to the trade two handy calendars for 1898. One is well adapted for wall use, the figures being prominent, and at the same time, occupying but little room; the other is suitable for either the desk or supension, the cards (one for each month) being printed in two colours and neatly encased in leather binding.

PRESENTATION TO A PAPER MILL FOREMAN.—On the occasion of his approaching marriage the employees at Inverkeithing Paper Mills recently presented Mr. Alex. Stratton, foreman, with a handsome marble timepiece, together with a silver teapot and cruet for his intended. The presentation was made by Mr. Miller, the cashier.

JAMES KENYON and SON,
DERBY STREET MILLS,
BURY, LANCASHIRE.
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The World's Paper Trade Review
A Weekly Journal for Paper Makers & Engineers

Established 1879.

Printed and Published EVERY FRIDAY

By W. JOHN STONHILL.

at 58, Shoe Lane, London, E.C.,

Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, JANUARY 14, 1898.

Foreign Paper in Great Britain.

WHETHER the paper trade of this country be dull or active, prices weak or firm, the demand for the foreign product continues to increase. British papermakers must recognise the enormous hold the foreign papermaker has on the British market, and those who for so long treated foreign competition in the light of a myth must admit that the imports of foreign paper are now on such a large scale as to cause the greatest concern. The following figures show the value of the arrivals of paper, strawboards, etc., of foreign manufacture, at British ports during the past three years:—

1897	...	...	...	**£3,481,114**
1896	...	...	...	**3,138,438**
1895	...	...	...	**2,845,730**

Nearly three-and-a-half million pounds sterling last year! To be exact, the re-exports amounting to £85,243 should be deducted from the value of the total imports. The remainder represents the value of the actual consumption of foreign paper in the United Kingdom.

* * *

Competing Countries.

LAST YEAR the British imported unprinted paper to the value of £2,536,000, against £2,367,909 in the previous year; printed paper to the value of £312,169, against £278,189; and strawboards, millboards, and wood pulp boards, to the value of £632,945, against £492,250. The following comparative figures show the value of the imports of "unprinted" paper from the countries mentioned:—

	1896.	1897.	Increase or Decrease
Sweden ...	£371,538	£357,970	— £13,568
Germany ...	482,937	443,621	— 39,316
Holland ...	433,568	420,026	— 13,542
Belgium ...	329,751	274,521	— 55,230
Other Countries	750,205	1,039,862	+ 289,657
Totals ...	£2,367,909	£2,536,000	+ £168,001

It is noteworthy that declines are shown in the value of the imports from Germany, Holland, Sweden, and Belgium. There is, however, an enormous increase in the value of supplies from "other countries," and as there has been considerable talk of large shipments of paper to Great Britain from the United States during the past year, it may safely be inferred that American competition is largely responsible for the difference of £289,657 shown above.

* * *

Exports of British Paper.

POSSIBLY the British papermaker has found attention to home requirements more profitable than the extension of an export trade. Once having got a firm hold of a market, it is not, however, a good policy to neglect it, especially as the foreign manufacturer is only too ready to take advantage of any little opening. The following figures show the value of the exports of British paper during the past three years:—

1897	...	...	...	**£1,523,401**
1896	...	...	...	**1,629,971**
1895	...	...	...	**1,436,691**

A drop is shown compared with 1896, although the amount last year is above that of 1895. It should be the aim of British papermakers to be in a position not only to meet the home demand, but also to maintain a leading position in fulfilling colonial requirements.

* * *

A Declining Trade.

THE value of the exports of British writings, printings, and envelopes last year, was £1,015,872, compared with £1,096,995 in 1896; the exports of hangings amounted to £175,170 against £172,041; and the shipments of "all other descriptions" to £332,359 against £300,935. The following are the comparative values of paper (excluding hangings) ex-

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ported to the countries mentioned during 1897 and the previous year :—

	1896.	1897.	Increase or Decrease.
France ...	£117,576	£104,764	—£12,812
U.S.A. ...	66,540	58,993	— 7,547
B. S. Africa...	171,415	162,625	— 8,790
E. Indies ...	135,833	136,213	+ 380
Australasia ...	580,040	499,529	— 80,511
B.N. America	43,105	40,961	— 2,144
Various ...	343,421	345,146	+ 1,725
Total	£1,457,930	£1,348,231	—£109,699

A slight increase is shown in trade with the East Indies and "other countries," but the heavy decline in exports to Australia is disappointing.

* * *

Pegamoid in the States—A Capital of £1,000,000 Sterling.

THE American Pegamoid Company has filed articles of incorporation with the Secretary of the State of New Jersey. The capital stock is 5,000,000 dols. The company's principal place of business will be at Undercliff, Bergen County, and the incorporators are Messrs. John R. Bartlett, Conrad, N. Jordan, John T. Collins, John J. McCook, Gilbert I. Herbert, John A. McCall, Joseph J. Buyers, and Thomos A. McIntyre, of New York; Edward H. Haskell, of Newton, Mass.; Peter T. Austin, of Brooklyn; Arthur Wallace Pope and Albert A. Pope, of Boston, and Ed. F. C. Young, of Jersey City. The certificate says the company is organised to import, deal in, and manfacture paper, paper materials, and paper substitutes of all kinds, and of raw substances, pulps, preparations, and mixtures thereof, and all articles to be made from paper or paper substitutes. It may also do business as stationers, lithographers, publishers and manufacturers of wall paper.

Stocks and Shares.

The Paper share market has not been very brisk during the past week, only a few transactions taking place, though in the majority of cases quotations are better, and a firm tone prevails. News came to hand to-day (Wednesday) of an increased dividend for Roach Bridge, 10 per cent. as against 7½ per cent. for last half-year, making 8¾ per cent. for the year; the shares are quoted ¼ higher. A further improvement is noticed in Kellner-Partingtons fully-paid of ½, and Waterlow and Sons deferred are in demand at a rise of 1. Peebles ordinary also are better, but North of Ireland are lower.

In Chemicals, Brunner-Monds still continue their recent improvement and are ¾ better; the new also are nearly 1 better than last week, but the "new" preference are ¼ down. F. Steiner and Co. preference are easier by ¼, but the debenture stock has improved a point. United Alkali are without change on the week, and Bowman, Thompsons are without feature. Castner-Kellners have receded 6d., and Clayton Aniline preference remain firm at last week's quotation.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices Jan. 12th.
5	5	Hyde Paper Works Co.(Ld.)	nil	1⅛—2
10	10	Bath Paper Mill Co. ,,	5	11⅛—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—104 x.d.
0	10	do. do. 6% pref.	6	12—13
3⅜	5	Burnley Paper Co. l(Ld.)	10	5⅞—6⅛
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref.	6	7⅛—7½
2⅜	3	Collin (Darwen) Paper ,,	nil	1/16—3/16
3⅜	5	Darwen Paper Co. ,,	15	7½—8
10	10	E. Lancashire Paper Co. ,,	nil	5½—5¾
10	10	do. do. 6% pref.	nil	5⅜—6
5	5	do. do. bonus	nil	¼—2½
4	5	Hartlepool Pulp & Paper,,	10	7⅜—7⅞
2⅜	5	Kelln'r-Part'gt'n P'p Co,,	15	7⅛—8
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12⅜	7⅜—7⅞
7	10	Olive Brothers ,,	10	7½—7¾
5	5	Peebles (A. M.) & Son ,,	8	7½—7¾
5	5	do. 5% cum. pref.	5	6⅜—6⅝
100	Stock	do. 4½% deb. issued 105	4½	111½—112½
3	5	Ramsbottom Paper Co. ,,	10	6¾—7
1	1	do. do. cum. pref.	5	1⅛—1½
4½	5	Roach Bridge Paper Co. ,,	7½	5—5⅛ c.d.
5	5	Star Paper Co.	10	7⅜—7⅞
3	5	do. do. cum. pref.	10	6—6½
0	100	Thomas Owen and Co. deb. (repayable on notice at 110)	5	114—115
1	1	do. do. 6% pref.	6	27/—27/6
1	1	do. do. ord.	12½	2—2¼
10	10	Waterlow & Sons non.-cum. def.	12	15½—15¾
		do. do. non.-cum. pref.		14¾—15¼
10	10	do. do. cum. pref.	3½	10¾—11¼

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	8⅛—8⅜
10	10	do. do. cum. pref.	7	11¼—11½
100	100	do. do. debs. (red. 1904)	6	107—108
10	10	Brunner, Mond & Co. (Ld.)	20	40¼—40⅝
3½	10	do. do. "New" ,,	20	17½—17⅝
10	10	do. do. 7% pref. ,,	7	18—18¼
5	10	do. do. do. new issue	7	8½—8¾
1	1	Castner-Kellner Co. ,,	—	2/6—3/-
5	5	Clayton Aniline cum. pref.	6	5⅞—6⅛
10	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11½—11¾ x.d.
100	Stock	do. do. deb. stock (red. 1912).	4	106—108 x.d.
10	10	United Alkali Co. ,,	2	2 1/16—2¼
10	10	do. do. cum. pref.,,	7	9 15/16—9 15/16
100	Stock	do. mort. deb. (red. after 1901)	5	110—110½ x.d

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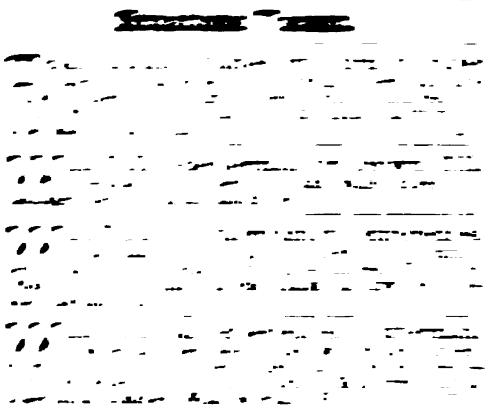

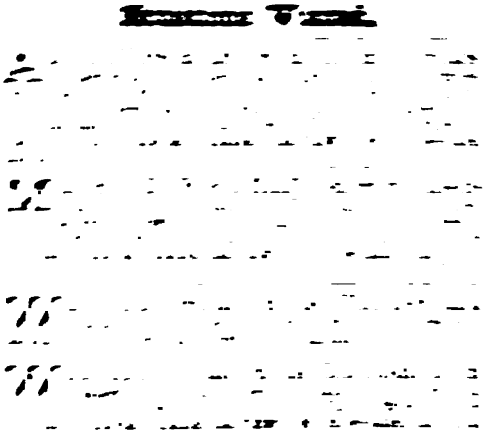

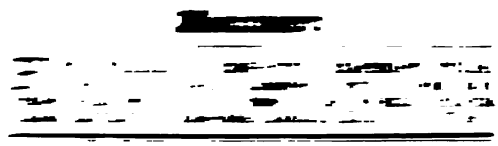

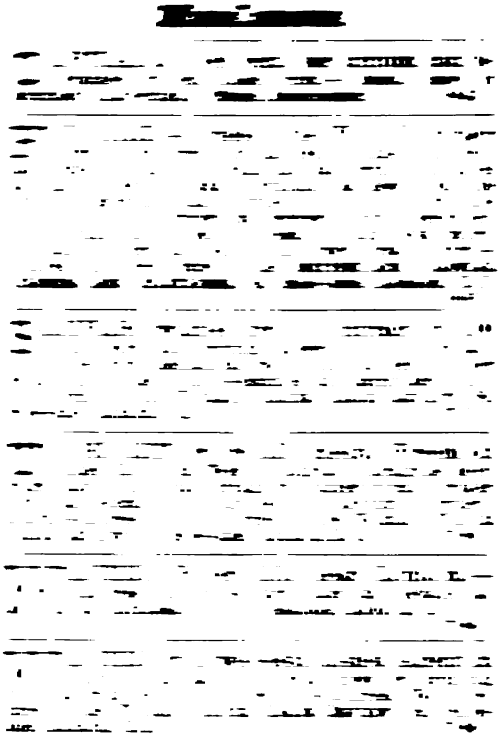

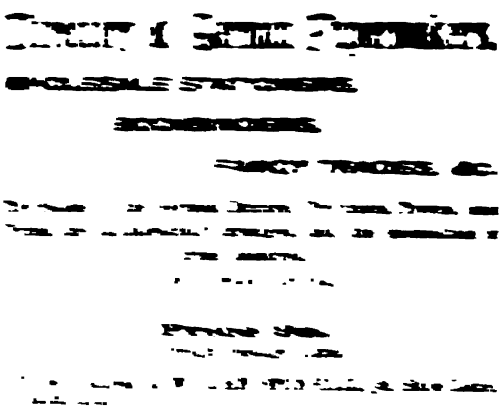

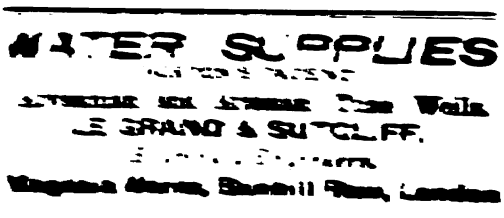

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Patents, Designs & Trade Marks Acts, 1883 to 1888.

NOTICE is Hereby Given that ALFRED GEORGE BROOKES, of 55 and 56, Chancery Lane, in the County of London, has applied for leave to amend the Specification of the Letters Patent No 213 of 1897 for "Improvements in Means or Apparatus for Surface Coating Materials in Web form for Printing upon and for other uses."

Particulars of the proposed amendment were set forth in the "Illustrated Official Journal" (Patents), issued on the 31st December, 1897.

Any person or persons may give Notice of Opposition to the Amendment (on Form G), at the Patent Office, 25, Southampton Buildings, London, W.C., within one calendar month from the date of the said Journal.

(*Signed*) C. N. DALTON,
Comptroller-General.

Wm. BROOKES & SON,
55-56, Chancery Lane, London, W.C.
Chartered Patent Agents. 7177

THE SCANDINAVIAN SECTION

OF THE

World's ABC Paper Mill Guide

Containing Particulars of the Paper and Pulp Mills in Norway, Sweden, Denmark and Finland.

PRICE FIVE SHILLINGS.

WE have pleasure in announcing the issue of the above. It is in a convenient 8vo form, and, to some extent, on the lines of our last Mill Guide, but the information there given is very considerably added to with the view of making this section of the work a complete directory of the "Paper and Pulp Trade of Scandinavia." Full particulars, are given of class of pulp or paper made, output, machinery and power used, nearest railway station, managers and owners, &c., &c.

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The Directory is accompanied by a Large Scale Map showing the situation of the various mills, with numbers appended, referring to the entries in the Guide, and also a numerical index to the names of the Mills whose position is noted on the Map.

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W. JOHN STONHILL, 58, Shoe Lane, LONDON, E.C

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last :—

STRAWBOARDS.

3000 b	Cologne	London	1947 b	Rotterdam	Manc'ter
1586 „	Rotterdam	„	3940 „	„	Bristol
50 „	New York	„	6146 „	Delfzyl	Grangem'th

WOOD PULP BOARDS.

2494 b	Stettin	London	400 b	New York	Hull
79 „	„	Leith	202 „	„	Liverpool
15 „	Gothenburg	„	115 c	Drammen	Manch'ter
125 „	Christiania	Hull	413 b	New York	„

MILLBOARDS.

6692 b	Rotterdan	Hull	5406 b	Delfzyl	Grangem'th
6880 „	Harlingen	„	16 „	Boston	„
160 „	Hambro	Goole	56 „	Hambro	London

PASTEBOARDS.

10843 b	Harlingen	London	690 b	Triest	Liverpool
645 „	Triest	„	440 „	New York	London
440 „	New York	„	2 c	Hamburg	Gr'ngem'h
400 „	Rotterdam	„	1 „	„	Grimsby
136 „	Hambro	„	1257 b	Harlingen	Leith

b—bales. c—cases. r—rolls.

NEW PATENTS.

APPLICATIONS.

30,574. Improrements in the recovery of chemicals from spent soda and other liquors. S. Jaques.

30,579. Improvements in the manufacture of paper. S. Jaques.

30,616. Improvements in evaporating or concentrating apparatus. J. McNeil and J. Lewkowitsch.

30,841. Improvements in electrolytic apparatus. G. C. Marks.

30,891. Improvements in or relating to one cylinder paper machines for producing roll pasteboard. A. Schwarz.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

1897.

17,097. Apparatus for straining pulp for papermaking, de Pretto.

NOW READY.

A Stämpelbok,

Or Book of the Trade Marks of the Chemical and Mechanical Wood Pulp Mills in Sweden and Norway.

Each Country in a separate volume, 8vo. cloth.

Compiled by Mr. K. VON HOFSTEN, Gothenburg, Secretary to the Association of Scandinavian Pulp Makers (Swedish Section).

☛ Copies can be had at the Office of the WORLD'S PAPER TRADE REVIEW, price 7 6 each post free.

These Books not only contain the Shipping Marks of each Mill, but give also full particulars about their Names, Owners, and Production; they should therefore prove Most Useful Guides to anyone connected with the Pulp Industry in Scandinavia.

Can also be had in One Volume, uniform with above, and in the ENGLISH LANGUAGE for 15/- net and post free.

Special Supplementary Lists of the New Mills started to the end of 1897 are now included.

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Office: 58, Shoe Lane,
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MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports o London, Liverpool, Manchester, Runcorn, Fleetwood Preston, Barrow, Bristol, Cardiff, Hull, Southampton Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams.

Telegrams—"STONHILL, LONDON."

CHEMICALS.—Trade quiet. The recent advance in AMMONIA ALKALI is well maintained. Competition in BLEACH and CAUSTIC is very keen. SODA CRYSTALS scarce.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½ % 5 5 0
,, ,, barrels	...	,, ,,	2½ % 5 15 0
,, ,, tierces	...	,, Hull	2½ % 5 2 6
,, ,, ,,	...	Goole	2½ % 5 2 6
,, ,,	...	f.o.b. Glasgow	2½ % 5 2 6
Alum Lump) ,,	...	f.o.b. Liverpool	2½ % 4 12 6
,, ,, barrels	...	,, ,,	2½ % 4 15 0
,, ,, tierces	...	,, Hull	2½ % 4 12 6
,, ,, ,,	...	Goole	2½ % 4 12 6
,, ,, ,,	...	London	2½ % 5 2 6
,, ,, ,,	...	f.a.s. Glasgow	2½ % 4 17 6
Alumina Sulphate	...	f.o.b. Tyne	net 3 11 3
Aluminoferric Cake, slabs		Liverpool ...	... 2 15 0
,, ,, tierces		,, ...	... 3 2 6
Aluzina Cake, ... slabs		Glasgow ...	... 2 10 0
Blanc Fixe ...	...	f.o.b. Tyne	net 6 17 6
Bleach, ...	...	,, ,,	net 6 0 0
,, (soft wood)	...	f.o.r. Lancs.	net 5 15 0
,, (hard wood)	...	f.o.b. Liverpool	net 6 5 0
,, (soft wood)	...	landed London	net 6 12 6
Borax (crystals) ...	...	... ...	net 14 10 0
,, powdered ...	...	... ... ,,	net 15 0 0
Chloride of Barium	...	f.o.b. Tyne	net 6 15 0
Caustic White 76%	...	f.o.b. Liverpool	net 8 15 0
,, 74%	...	,, ,,	net 8 10 0
,, 70%	...	,, ,,	net 7 10 0
,, 70%	...	f.o.r. Lancs.,	net 7 7 6
,, 60%	...	f.o.b. Liverpool	net 6 10 0
Caustic Cream, 60%	...	f.o.r. Lancs.	net 5 15 0
,, 60%	...	f.o.b. Liverpool	net 5 17 6
,, Bottoms 60-62%	...	f.o.r. Lancs	net 4 6 0
Soda Ash, Carbonated 58%		f.o.b. Liverpool	net 4 17 6
,, ,, 48%		,,	net 4 12 6
,, ,, 58%		f.o.r. Widnes	net 4 15 0
,, ,, 48%		,, ,,	net 4 10 0
,, Ammonia 58%		f.o.b. Liverpool	4 5 0
,, ,, 48%		,,	4 0 0
,, Caustic 48%		,,	4 17 6
,, ,, 57-58%		,,	5 2 6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots	4 15 0
,, 10-ton lots		ex ship Liverp'l net	5 5 0
Oxalic Acid	...	f.o.b. Liverpool	3½ % per lb 3
Salt Cake	...	on rail, in bulk	1 2 0
Sal Ammonia (1sts)	...	f.o.b. Liverpool	33 0 0
,, (2nds)	...	,,	31 0 0
Soda Crystals ...	...	f.o.b. Tyne	net 2 15 0
,, ,, ...	...	ex ship Thames	2½ % 2 15 0
,, ,, ...	...	f.o.b. Liverpool	5% 2 17 6
Sulphur, roll ...	...	f.a.s. works	2½ % 6 5 0
,, flowers ...	..	,, ,,	2½ % 7 5 0
,, recovered	...	,, ,,	2½ % 5 0 0
Sulphate of Ammonia	,,	,, ,,	2½ % 9 10 0
,, of Copper	...	,, Liverpool	5% 16 10 0

FOREIGN.—F.o.b. Continental port :

Hypo-Sulphite of Soda 10-ton lots casks	...	5 0 0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3 15 0
Blanc Fixe (c.i.f. London)		7 0 0
White Sugar of Lead		24 0 0
ic Oxide		18 0 0
aching Powder		5 15 0

CHEMICAL WOOD PULPS.— Business is looking up after the holidays, and as shipments are generally late the spot parcels are eagerly sought after, and good prices obtained.

BRITISH QUOTATIONS.

Prices, ex steamer, London, Hull, Newcastle, Leith and Glasgow are nominally as follows :

SULPHITE, Unbleached, Common		£8 15 0 to 9 0 0	
,, Superior ,, ...		9 0 0 ,, 9 10 0	
,, Bleached, ...		11 10 0 ,, 15 0 0	
SODA, Unbleached, Common ...		8 5 0 ,, 8 10 0	
,, Extra...		8 15 0 ,, 9 5 0	
,, Bleached		10 10 0 ,, 12 0 0	

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 16
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.25 to 25.
,, Bleached	31. ,, 36
SODA, Unbleached	21. ,, 24.
,, Bleached	28. ,, 30.
SULPHATE, Unbleached	21. ,, 24.
,, Bleached	28. ,, 30.

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached ...	2 to 2½
,, SODA Bleached ...	1½ 2
FOREIGN SODA, Unbleached	2·5c.
,, Bleached	2·90c.
,, SULPHITE, Unbleached ...	2·30 ,, 2·75c.
,, ,, Bleached... ...	3.25 ,, 3·30c.

MECHANICAL WOOD PULPS.—There is very little movement to report. There are no fresh contracts on the market just now, papermakers being apparently well bought forward at prices below those quoted by the Scandinavian Union, notwithstanding the drop of 5s. per ton on Dry and 2s. 6d. on Moist pulp. Scandinavian manufacturers report that they have very little stock, and consequently show a firm attitude. The fact must not be overlooked, however, that large quantities are being offered and actually shipped from both America and Canada. Present prices are £2 6s. 3d. for Moist and £4 12s. 6d. for Dry.

BRITISH PRICES.

Ex steamer, London, Hull, Newcastle, Leith and Glasgow are as follows:

Aspen, Dry		£6 10 0	
Pine, Dry		£4 12 6 to 5 0 0	
,, Moist		2 6 3 ,, 2 10 0	
Brown, Dry		4 15 0	
,, Moist		2 10 0	

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt

Pine Pulp, 50% moisture, ordinary ...	Frs. 12.50 to 13.	
,, ,, fine ...	13. ,, 13.50	
,, dry, ordinary	11.50 ,, 12.	
,, ,, fine	12.50 ,, 13.	
Aspen, ,, ,, ...	16. ,, 18.	
Half-Chemical Brown, 50% moisture	12.50 ,, 13.	
,, ,, dry ...	12.50 ,, 13.	

AMERICAN QUOTATIONS.

F.o.b. Mill ... ...

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
95 bales	Gothenburg	Huss and Son	London
10 ,,	,,	Spicer Bros	,,
200 ,,	Gefle		,,
2718 ,,	Harnas		,,
500 ,,	Stettin		,,
4290 ,,	Drammen		,,
3200 ,,	,,		,,
428 ,,	Fredrikshald		,,
15 tons	,,		,,

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Quantity	From	Importer	Port
407 bales	Christiania	Green and Co	London
50 cases	Drammen	,,	,,
80 bales	,,	Hummell & Co	,,
2620 ,,	Skein	Becker and Co	,,
500 ,,	,,	E. Lloyd Ltd	,,
2510 ,,	Stettin		,,
1600 ,,	Sarpsborg		,,
1200 ,,	Sannesund		,,
247 rolls	Philadelphia	Henderson and Davies	,,
1239 bales	,,	Henderson, Craig	,,
3895 ,,	Carlshamn		,,
26 ,,	Rotterdam		,,
1100 ,,	Konigsberg	J. Sharp	,,
56 ,,	Hambro		,,
1550 ,,	Stockholm	Henderson, Craig	,,
21 ,,	Boston	Spicer & Son	,,
400 ,,	Ostend		,,
1209 ,,	Boston		,,
571 ,,	Rotterdam		,,
10 ,,	Gothenburg	Konig and Co	,,
8 ,,	,,	Green and Co	,,
8 ,,	,,	Spicer and Son	,,
50 ,,	Ghent		,,
846 ,,	St. John's		Liverpool
732 rolls	Boston	Thin and Sinclair	,,
758 ,,	,,	,,	,,
170 bales	Gothenburg		,,
1980 ,,	St. John's		,,
1000 ,,	Stettin		Hull
1120 ,,	Christiania		,,
320 ,,	Gothenburg		,,
304 ,,	Drontheim		,,
4846 ,,	Sarpsborg	Kellner-Partington	Manchestr
40 ,,	Ghent		,,
800 ,,	Rotterdam		,,
4030 ,,	Christiania	W H. Ingram	,,
900 ,,	Drammen	,,	,,
1480 ,,	Skein	,,	,,
1060 ,,	Gothenburg		Granton
1500 ,,	Drammen		,,
788 ,,	Gothenburg		,,
250 ,,	Oporto		Glasgow
30 ,,	Portland, Me.		,,
2528 ,,	Skutskar	Henderson, Craig	Grangmth
3082 ,,	Christiania	,,	,,
280 ,,	Drontheim	,,	,,
134 ,,	Rotterdam		Leith
400 ,,	Copenhagen		,,
79 ,,	Rotterdam		Goole
2975 ,,	Skein	Tyrer and Co	Preston
2400 ,,	Kragero	,,	,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	530 bales	NORWAY ...	50 cases
CANADA ...	2826 ,,	PORTUGAL ...	250 bales
DENMARK ...	400 ,,	PRUSSIA ...	1100 ,,
GERMANY ...	4066 ,,	SWEDEN ...	18478 ,,
HOLLAND ...	1610 ,,	U.S.A.	2499 ,,
NORWAY ...	34124 ,,	,, ...	1737 rolls
,, ...	15 tons		

ESPARTO.—Business in new contracts is still feeling the holiday influence and enquiries are few. Quotations are unchanged and nominally firm.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—	Fair to Good	...	...	£4	10	0	to 4	17 6
,,	Fine to Best	...	...	5	5	0	,, 5	6 6
Oran —	Fair to Good	...	...	3	0	0	,, 3	2 6
,,	First Quality	...	...	3	3	9	,, 3	6 6
Tripoli —	Hand-picked	...	...	3	0	0	,, 3	2 6
,,	Fair Average	...	...	2	15	0	,, 2	17 6
Bona & Philippeville		...	...	3	3	9	,, 3	6 0

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
4450 trusses	Arzew		Grangemouth
497 tons	,,		Liverpool
614 ,,	Agullas		Glasgow
781 ,,	Oran		London
956 ,,	Philippeville	H Ottman	Granton

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common ...	£7 10 to £9 10
Good	£13 0 to £14 10	Rejections ..	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings ...	£3 0 to £4 0

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

FOREIGN RAGS.—There is a fair enquiry; shipments from France and Belgium are particularly good. British imports during the past week were as under:

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
44	Bremen	Hull	153	Boulogne	Goole
273	Stettin	,,	48	Antwerp	,,
37	,,	,,	60	Boulogne	,,
59	Hambro	,,	36	Amsterdam	,,
77	Amsterdam	,,	20	Hambro	Grimsby
101	Ghent	,,	51	Antwerp	,,
240	Copenhagen	,,	255	Dieppe	,,
41	Danzig	,,	37	Hambro	,,
28	Bremen	,,	26	Rotterdam	,,
28	Amsterdam	,,	54	Antwerp	,,
39	Rotterdam	,,	319	Dieppe	,,
50	Harlingen	,,	72	Antwerp	,,
41	Hamburg	,,	40	Hambro	,,
22	Dunkirk	,,	15	Guernsey	Sthmptn
20	Rotterdam	,,	75	Bordeaux	Liverp'l
106	Dunkirk	London	32	Constantinople	,,
28	Rotterdam	,,	57	Bordeaux	,,
7	,,	,,	18	Rotterdam	Leith
61	Philadelphia	,,	17	Konigsberg	,,
14	Ghent	,,	6	Hambro	,,
24	Gothenburg	,,	3	Rotterdam	,,
76	Antwerp	,,	90	Amsterdam	,,
60	Ghent	,,	302	Ghent	,,
24	,,	Goole	20	Amsterdam	,,
47	Amsterdam	,,			

Totals from Each Country:

BELGIUM ...	802 bales	HOLLAND ...	530 bales
CHANNEL Isles	15 ,,	PRUSSIA ...	17 ,,
DENMARK ...	240 ,,	SWEDEN ...	24 ,,
FRANCE ...	1017 ,,	TURKEY ...	32 ,,
GERMANY ...	585 ,,	U.S.A.	61 ,,

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope (coils)	8/0	Not free from wood	5/0

FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Blue Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	2c/6
Coloured Cotton ..	3/6	,, Stsy ,,	15/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	12/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No 1 6/0; No. II	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	8/0
SPF	11/0	CSPFFF	14/0
FF	8/0	CSPFF	10/0
FG	8/6	CFB (Blue)... ...	6/0
FFX	7/0	CFX (Coloured) ...	4/0

PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF	12/6	Jute I	3/0
FG	10/0	,, II...	2/0
LFB	8/0	Rope I...	8/6
FF	5/6	,, II ..	6/0

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MINERALS.—There is a brisk demand for CHINA CLAY, and prices are firm. BARYTES and FRENCH CHALK are in fair request. A fair trade is passing in MINERAL WHITE and SNOWDRIFT. The demand is chiefly for the home trade, exports not being up to the average.

Mineral White (also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine	28/0 less 2½ % ; del. Lancashire ...			38/0
Pottery Super.	24/0	,,	,, ...	34/0
Ball Seconds ...	20/0	,,	,, ...	30/0
Seconds	15/0	,,	,, ...	25/0
Thirds	11/0	,,	,, ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/6 and casks 9/6 per ton extra ; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in cask 45/0 per ton ; f.o.b. Liverpool in 5 cwt. casks 47/- to 52/6.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 66/0, 73/6, 77/6 and 92/6 per ton, according to quality, less 2½ %.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool, I.W.A., "Portland Mills," and "Swan" marks, £4 15/- to £6 0/- per ton of 10 bags

Superfine Hardening, f.o.r. works. 40/- to 42/-,

Patent Hardening (2 ton lots) f.o.r. Lancs., £35/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £6 0/0 ; calcined, £11.

Magnesite (in lump) 39/6 to 46/0 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, 35/- to 68/- per ton, according to quality.

Bauxite, minimum alumina, 60 %, 15/9 f.o.b.

Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.

Satinite, £3 to £3 6s. 0d., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/6 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0 to £13 15/- del.

W. FRIEDLAENDER,

60, Fenchurch Street,

Telegrams: "LANDFRIED—LONDON." LONDON, E.C.

Sulphite, Sulphate & Soda Pulps.

BLEACHED & UNBLEACHED,

IN PURE STRONG FELTY QUALITIES.

STRAW PULP

The VEREINIGTE STROHSTOFF-FABRIKEN (Dresden)
United Straw Pulp Manufacturing Co., Limited,
COSWIG, SACHSEN,

Recommend their First-class Bleached Dry STRAW PULP, Brands V.S.T. and V.S.R. Unequalled in Whiteness and Purity. Strong and Felty. Warranted free from clays and colours. Used by Leading Paper Mills in Europe and U.S.A. *For Samples, &c., please apply to the Sole Agents:*

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	130	—	—
BELGIUM	2693	33	15
DENMARK...	513	—	—
FRANCE	319	9	—
FINLAND	94	—	—
GERMANY	4306	51	79
HOLLAND	3355	10	—
ITALY...	27	—	—
JAPAN	4	—	—
NORWAY	4,81	—	288
SWEDEN	4980	—	349
U.S.A....	5658	144	2737

Including the Following:—

Quantity	From	Importer	Port
60 rolls	Boston	Spicer Bros	Liverpool
124 bales	,,	Witting Bros	London
441 ,,	,,	Spicer Bros	,,
7 cases	,,	Hunt, Fourdrinier & Co	,,
18 ,,	,,	Hazell, Watson & Co	,,
57 bales	Copenhagen	Morgan & Co	,,
35 ,,	,,	Puckert & Co	,,
133 ,,	,,	Felber, Jucker & Co	Manchester
233 ,,	,,	,,	London
10 ,,	,,	R. Ulrich	,,
41 ,,	,,	C. Morgan & Co	,,
14 ,,	,,	H. Puckert & Co	,,
156 ,,	Christiansand	W. H. Ingram	Manchester
72 ,,	,,	Witting Bros	London
22 ,,	,,	W. Ibbotson	,,
10 ,,	,,	C. Morgan	,,
28 ,,	,,	Crabb & Co	,,
41 ,,	,,	A. Cowan & Sons	,,
41 ,,	,,	W. Guppy	,,
156 ,,	Christiania	W. H. Ingram	Manchester
50 ,,	,,	Alsing & Co	London
35 ,,	,,	Becker & Wagner	,,
85 ,,	,,	C. Morgan & Co	,,
15 ,,	,,	O. Scholzig	,,
11 ,,	,,	F. E. Foulger	,,
29 ,,	,,	W. E. Bott & Co	,,
48 ,,	,,	Partington	,,
293 ,,	Drammen	W. H. Ingram	Manchester
75 ,,	,,	R. Ulrich	London
32 ,,	,,	Cookson & Co	,,
18 ,,	,,	C. Morgan	,,
3 ,,	,,	E. Lloyd	,,
677 ,,	,,	H. Henie	,,
506 ,,	,,	Alsing & Co	,,
51 ,,	,,	Becker & Wagner	,,
40 ,,	,,	J. Hamilton	,,
11 ,,	,,	F. Claydon & Co	,,
3 ,,	,,	Brown & Co	,,
19 ,,	,,	J. Spicer	,,
40 ,,	,,	Hernu, Peron & Co	,,
34 ,,	,,	W. E. Bott & Co	,,
12 ,,	,,	G. F. Green	,,
1131 ,,	,,	Crabb & Co	,,
13 ,,	Gothenburg	J. Spicer & Sons	,,
9 ,,	,,	Bahr, Behrend & Co	Liverpool
15 ,,	,,	Cowan & Co	,,
127 rolls	,,	Binnie & Co	,,
17 bales	,,	,,	,,
17 ,,	,,	O. Scholzig	London
83 ,,	,,	J. Eberstein	,,
204 ,,	,,	Schenkenwald & Co	,,
176 ,,	,,	,,	,,
14 ,,	,,	W. D. Edwards	,,
17 ,,	,,	E. Lloyd	,,
90 ,,	,,	E. E. Sabel	,,
162 ,,	,,	J. Eberstein	,,
39 ,,	,,	L. C. Lockwood	,,
25 ,,	,,	J. Hamilton	,,
325 ,,	,,	R. L. Lundgren	,,
7 ,,	,,	Davis & Co	,,
38 ,,	,,	J. Spicer & Son	,,
34 ,,	,,	Schenkenwald	Hull
107 ,,	New York	,,	London
93 ,,	,,	Lepard & Smith	,,
226 ,,	,,	,,	,,
97 ,,	,,	Brown, Brough & Co	,,
98 bales	New York	E. Lloyd	London
104 ,,	,,	C. Morgan	,,
257 ,,	,,	Grosvenor, Chater & Co	,,
311 ,,	Norrkoping	J. Eberstein	,,
18 ,,	,,	Becker & Wagner	,,
38 ,,	,,	J. Spicer	,,
737 ,,	,,	Skarbiacka	,,
194 ,,	Phi'adelphia	Pfeil Stedall & Co	,,
23 ,,	Stettin	Dixon & Co	Liverpool
12 ,,	,,	J. Shuley & Co	,,
22 ,,	,,	Spalding & Hodge	,,
41 ,,	,,	Cookson McDonald	,,
240 ,,	Uddevalla	D. Gulland	London
10 ,,	,,	R. L. Lundgren	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various Cwts
AUSTRALASIA	2952	461	4
AFRICA	112	38	133
B. GUIANA...	—	2	—
B. W. INDIES	—	—	15
BELGIUM	18	31	42
CAPE COLONY	227	48	8
CANADA	—	—	21
CHANNEL ISLES ...	—	—	60
CHINA	453	45	—
EGYPT	—	17	2
FRANCE	8	28	21
GIBRALTAR	—	24	20
GERMANY...	—	15	—
GREECE	—	—	10
HOLLAND	77	2	440
INDIA	1216	889	252
JAPAN	—	23	89
MAURITIUS	—	12	57
NEW ZEALAND ...	937	378	324
PORTUGAL	—	5	—
SPAIN...	—	—	3
S. SETTLEMENTS ...	—	—	16
SWEDEN	—	—	31
U.S.A....	44	—	31
W. INDIES...	—	4	47

FROM LIVERPOOL.

(*Unclassified.*)

	Bales.	Cases.	Rolls
AFRICA	55	5	—
ARGENTINE	—	1	—
AUSTRALASIA	63	—	—
CAPE COLONY	14	—	23
CHILI	20	—	—
GERMANY	6	18	—
HOLLAND	—	—	157
INDIA...	—	7	—
JAPAN...	2	—	—
NEW ZEALAND... ...	—	3	—
U.S.A....	—	7	—
W. INDIES	17	—	—

FROM GLASGOW.

	Printings. Cwts.	Writing. Cwts.	Various. Cwts.
AUSTRALASIA	157	241	—
AFRICA	—	—	40
CAPE COLONY	11	—	—
CHINA	34	—	—
NEW ZEALAND ...	23	—	—

THE PAPER TRADE REVIEW is a widely informed and well-managed enterprise, of great value to exporters for its exact Market Reports and statistics of Raw Material.—*Central-Blatt fur die Papier-Fabrikation*, Dresden.

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Soda and

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GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

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British Imports of Foreign Paper.

UNPRINTED.

COUNTRY.	DECEMBER.			JAN.—DECEMBER.		
	1895.	1896.	1897.	1895.	1896.	1897.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Sweden	44,059	43,618	46,126	417,876	498,278	491,201
Germany...	39,921	42,038	43,082	460,713	513,101	480,405
Holland	39,853	54,715	53,690	392,299	575,475	499,127
Belgium	18,142	25,883	16,241	197,933	266,642	227,872
Various	45,673	72,859	136,653	615,103	717,881	1,287,055
TOTALS	187,648	239,113	295,792	2,083,924	2,571,377	2,985,660
VALUE.	£	£	£	£	£	£
Sweden	36,985	30,752	33,962	334,294	371,538	357,970
Germany...	39,891	38,005	36,063	459,482	482,937	443,621
Holland	37,668	42,113	45,497	389,103	433,568	420,026
Belgium	23,610	30,772	19,809	248,415	329,751	274,521
Various	55,284	64,155	107,671	614,977	750,205	1,039,862
TOTALS	£193,438	£205,797	£243,002	£2,046,271	£2,367,999	£2,536,000

PRINTED.

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Germany...	416	1,660	1,402	9,615	14,732	9,545
Holland	1,829	1,180	1,479	18,263	14,608	17,656
Belgium	2,645	2,004	4,661	29,306	34,643	42,254
France	742	1,020	831	8,498	8,325	10,675
Various	462	661	2,651	11,216	13,458	19,818
TOTALS	6,094	6,525	11,024	76,898	85,766	99,948
VALUE.	£	£	£	£	£	£
Germany...	1,532	4,806	3,354	25,509	44,823	27,189
Holland	5,854	3,867	5,137	62,439	55,040	59,801
Belgium	7,904	5,498	13,965	88,919	95,558	118,659
France	4,567	5,056	4,187	45,782	47,938	58,245
Various	1,728	1,837	8,221	31,405	34,830	48,275
TOTALS	£21,585	£21,664	£34,864	£254,054	£278,189	£312,169

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Quantity—cwts. ...	165,869	125,389	170,340	1,529,740	1,383,749	1,759,416
Value	£58,647	£45,313	£63,324	£545,405	£492,250	£632,945

TOTALS.

Dec.	1897	477,156 cwts	£341,190	Jan.-Dec.	1897	4,845,024 cwts	£3,481,114
,,	1896	371,027 ,,	272,774	,,	1896	4,040,892 ,,	3,138,438
,,	1895	359,641 ,,	273,670	,,	1895	3,690,562 ,,	2,845,730

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PRINTINGS AND WRITINGS.

COUNTRY.	DECEMBER.			JAN.-DECEMBER.		
	1895.	1896.	1897.	1895.	1896.	1897.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	3,576	4,724	3,067	46,490	52,408	40,467
U. States	628	650	672	14,271	12,264	10,167
S. Africa	6,804	7,237	6,479	63,953	76,349	78,245
E. Indies	5,293	4,855	13,417	56,188	64,604	68,603
Australasia... ...	28,529	42,874	16,601	312,798	373,366	333,861
B. N. America ...	1,175	1,187	773	16,689	18,428	19,356
Various	10,986	9,411	11,854	117,171	132,487	137,546
TOTALS ...	56,991	70,947	52,863	627,560	729,906	688,245
VALUE.	£	£	£	£	£	£
France	5,476	7,979	5,442	72,233	81,746	70,442
U. States	1,432	1,261	1,249	32,440	26,192	24,173
S. Africa	12,548	12,059	9,854	106,402	122,313	118,518
E. Indies	8,385	8,751	17,644	98,306	114,440	113,808
Australasia... ...	36,284	54,352	23,325	389,410	472,488	406,696
B. N. America ...	2,315	2,406	1,739	31,078	32,882	33,328
Various	20,650	19,127	21,027	227,007	246,934	248,907
TOTALS ...	£87,090	£105,935	£80,280	£956,876	£1,096,995	£1,015,872

OTHER KINDS.

(Excluding Hangings).

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	572	658	556	8,815	9,522	8,363
U. States...	1,148	1,170	594	13,551	10,535	9,808
S. Africa	3,160	4,443	4,528	40,727	50,188	45,642
E. Indies	1,325	1,413	1,211	14,935	14,218	15,620
Australasia	7,277	11,634	6,510	81,375	114,747	100,210
B. N. America ...	355	260	326	4,103	4,120	3,302
Various	5,417	5,287	5,359	51,460	54,642	58,789
TOTALS	19,254	24,865	19,084	214,966	257,972	241,734
VALUE.	£	£	£	£	£	£
France	2,423	2,706	2,778	36,455	35,830	34,322
U. States...	4,503	4,334	2,460	52,457	40,348	34,820
S. Africa	3,253	4,276	4,188	37,914	49,102	44,107
E. Indies	1,434	1,925	1,970	20,401	21,393	22,405
Australasia	7,611	11,133	6,869	84,404	107,552	92,833
B. N. America ...	911	603	710	8,943	10,223	7,633
Various	8,820	8,561	8,688	91,036	96,487	96,239
TOTALS	£28,955	£33,538	£27,663	£331,610	£360,935	£352,359

TOTALS *(Including Hangings)*:

Dec.	1897	78,126 cwts	£122,563	Jan.-Dec.	1897	1,003,924 cwts	£1,523,401
,,	1896	101,907 ,,	154,631	,,	1896	1,060,243 ,,	1,629,971
,,	1895	81,611 ,,	129,032	,,	1895	906,842 ,,	1,436,690

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Abridged Patent Specifications.

11,122 (97).—**Improvements in Apparatus for Cutting and Printing on Strips of Cardboard or other material for making Boxes, or for other purposes.**—WILLIAM HENRY BUTLER. Accepted 4th September, 1897.

An improved cutting and printing machanism for cutting portions from a strip of cardboard or other suitable material and printing on the strip, is the object of this invention, the construction being especially adapted for forming box blanks from a strip of material and for attachment to box-making machines and similar machines, by which box blanks are formed into boxes either with or without filling.

24,663 (96).—**Improved Apparatus for Reeling Paper.**—ANDREW MASSON and ROBERT SCOTT. Accepted 25th September, 1897.

Consists in an improved combination of means of removably carrying a series of bobbins, and of simultaneously shifting the series of bobbins, so as to remove the reeled bobbin from the reeling position into a position into which it can be removed and replaced by an empty bobbin, and to bring an empty bobbin into the reeling position, and so on, continuously, whereby the working of the apparatus will be rendered practically continuous, and there will be a great saving of time and labour. Reels of much larger diameter than is at present practicable can thus be, it is claimed by the patentees of this invention, conveniently reeled and manipulated.

24,693 (96).—**Improvements in Machinery for Making Paper or Cardboard Boxes.**—NETTLEFOLDS LIMITED and LOUIS EDWARD PARFITT. Accepted 25th September, 1897.

The paper or cardboard to be made into boxes, according to this invention, is preferably supplied to the machine from a continuous roll situated on a horizontal axis or spindle. In making the paper or cardboard boxes by the machinery constituting this invention, the paper or cardboard passes through three processes or operations, or series of operations. In the first operation a length of the paper sufficient to form a box is creased or scored at the parts which are to constitute the angles of the sides, top and bottom, nicks or cuts are also made in opposite sides of the strips, and the length is cut from the strip. The scored nicked and cut blank thus formed is passed on to that part of the machine where it undergoes the second operation, or series of operations. In the second operation the blank is folded lengthwise around a block or "former," and the opposite ends of the folded blank, which together form one of the sides of the partly made box, are secured together preferably by two wire stitches. The partly made box thus formed is then passed on to that part of the machine where it undergoes the third operation, or series of operations. In the third operation the flaps at one end of the partly-made box, which were formed by the nicking or cutting of the opposite edges of the strip of paper or cardboard, in the first described operation, are folded inwards, so as to form the bottom of the box, the folded flaps being secured by a wire stitch. The box is thus completed so far as the machine is concerned, and is ready for use.

17,911 (97).—**Improvements in the Manufacture of Cardboard and other Boxes.**—SAMUEL ROBERT LANG. Accepted 4th September, 1897.

An improved bottom piece is employed according to this invention, and also a clip hinge, which acts both as a hinge and as a fastener in securing the sides and cover of the box. The hinge has clip leaves or flaps, one of which is intended to clip the ends of the material forming the sides of the box, and the other to hold in position a lid or cover. The special bottom piece has projections round its periphery, intended to be passed through holes provided for them in the side piece or pieces.

24,010 (96).—**A New or Improved Composition for Treating Paper, Cardboard, Wood, or other Materials of a similar nature to render such Material Waterproof, and the Markings with Writing Inks thereon Indelible, also applicable for Use in the Manufacture of Paper, Cardboard, and the like.**—DAVID CUMMING SIMPSON. Accepted 18th September, 1897.

The composition or solution constituting this invention consists of a chemical preparation of alum, chlorate of potass, caustic soda made soluble in water, kaolin or china clay, and lac or shellac made soluble by ammonia in water. The solution is applied by immersion, or by coating with a brush or sponge, or it may be incorporated in the pulp in the manufacture of paper, cardboard, or manilla paper: the effect in any case being that the material becomes waterproof and the ink or other writings, printings, or marking materials used thereon become indelible in water thereby enabling them to be exposed to wet or damp without being effected thereby.

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A B..	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba.	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C..	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D..	71	28	730	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E..	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F..	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G..	108	42½	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H..	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I..	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
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20 ,,	,,	De Jonge and Co	,,
20 ,,	,,	Hampton and Co	,,
3 ,,	,,	Wagner and Co	,,
2 ,,	,,	P. Ruttmann	,,
33 ,,	,,	Knauth, Nachod & Co	,,
3 ,,	Amsterdam	E. Majert	,,
3 ,,	,,	H. S. Leclercq	,,
6 ,,	,,	W. Seyd	,,
13 ,,	,,	Dingelstedt and Co	,,
4 ,,	Hull	W. Henermann	,,
1 ,,	,,	Richard and Co	,,
2 ,,	Havre	Gluckman & Spiegel	,,
9 ,,	Liverpool	B. and O. Meyer	,,
16 ,,	London	Queen and Co	Philadelphia
1 ,,	,,	A. M. Oldham	New York
3 ,,	Massachusetts	Stiner and Co	,,
47 ,,	Marseilles	Phelps Bros	,,
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14 ,,	Rotterdam	Eagle Paper Co	New York
84 ,,	Stettin	De Jonge and Co	,,

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717 ,,	Genoa	Jessup & Moore	,,
33 ,,	Hull	Train, Smith & Co	Boston
450 ,,	,,	Butterworth and Co	,,
1 ,,	,,	W. F. Corne	,,
590 ,,	,,	Dutton and Co	,,
20 ,,	,,	Warren and Co	,,
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39 ,,	,,	Libmann and Co	,,
20 ,,	,,	Warren and Co	Boston
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23 ,,	,,	W. F. Corne	,,
308 ,,	,,	Train, Smith and Co	,,
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ALSING & Co., Ltd., 110, Cannon Street, London, E.C. Agents for the well known "K.K." Soda Pulp; also Sulphite and Mechanical.

AUSTIN & ELTRINGHAM, 21, Old Corn Exchange, Manchester. Wood Pulps, Satinite, Sulphate of Alumina, and all Papermakers' Chemicals and Colours

GRANT, W. & Co., 17, Baltic Street, Leith. Agents for best shippers, Sulphite and Sulphate, Mechanical, Pine, Brown, Aspen.

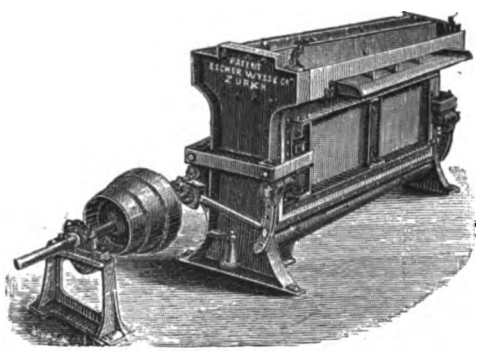
MULLER, A. E., 9, Fenchurch Street, London, E.C.

WERTHEIM, A. & Co., Hamburg.

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

OVER 100 AT WORK.

FACTS SPEAK FOR THEMSELVES—

The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES—

SUPERIOR to any other System for its Numerous Advantages as:

Large Production with any kind of Pulp.
No Stoppage for Cleaning.
Most Regular and Quite Noiseless Working
Little room taken up on the Machine, &c.

AGENT—

ALPH. STEIGER C.E.

16, MINCING LANE, LONDON, E.C.

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Commercial Intelligence.

Re CHARLES HENRY HALL, Printer and Publisher.

The first meeting of creditors under this failure was held at the London Bankruptcy Court, before Mr. H. Brougham. Mr. Todd appeared for Lancaster creditors, Mr. Attenborough for Messrs. W. Wilfred Head and Company, the petitioning creditors, and Mr. Alpe (Alpe, Ward and Company) for the debtor. Proofs to the amount of about £1,600 were tendered on behalf of creditors, and admitted for the purposes of voting. The Chairman reported that the debtor had not yet furnished the usual statement of his affairs, and the summary of accounts, together with the observations upon the failure, would have to be sent round to the creditors at a later date. From the information in his possession it appeared that the debtor, prior to attaining his majority, came into contact with Mr. Bewsher, who was then publishing a small weekly paper, entitled the *Empire Journal*, at Preston. The debtor had done some journalistic work for that paper, and about the end of February last he advanced £50 to Mr. Bewsher, to enable the latter to discharge a printing bill. In the following month the debtor took over the business from Mr. Bewsher, whom he installed as manager at a weekly salary of £3. He moved the business in May from Guildhall-street, where it had been previously carried on, to 7, Market-street, and there continued it under the style of the Empire Printing and Publishing Co. An execution was levied on the effects there last Michaelmas Day, at the instance of Messrs. Lockwood, wholesale stationers, of Manchester, under which everything was seized and sold. It further appeared that in July last the debtor came to London with Mr. Bewster, and on the 28th August took an office at 161, Strand, where business was carried on as the Empire Publishing Company until November, when the landlord distrained for £30 rent in arrear, and sold off the furniture, whereupon the publication of the *Empire Journal* came to an end. Since then the debtor had been without occupation of any kind. The businesses carried on both at Preston as the Empire Printing and Publishing Co., and at London as the Empire Publishing Co., had practically and simply consisted of the issue of the *Empire Journal*. The unsecured liabilities were roughly estimated by the debtor at £1,400, but seeing that proofs for over £1,600 had been lodged that estimate was considerably under the mark. The failure was attributed to miscalculation of the amount required for the purposes of the printing and publishing of the *Empire Journal*, and to other causes that would require some investigation. Continuing, the Chairman said the case undoubtedly called for a very stringent investigation. He would require a full and complete explanation as to where the debtor's money had gone. It was not very long ago that he came of age and into several thousands of pounds. Mr. Alpe said the debtor would be able to show what had become of all the money. The capital sum he received when he came of age was invested by an order of the Court dated November 14. He received £3,551, which was invested in London, Chatham and Dover stock. That had all been sold out, and had been absolutely lost, but every penny could be accounted for. The Chairman said the case stood thus. The debtor had got rid of £4,000 since November, when he received it from his father; he had also dispersed nearly £1,000 that had been borrowed in hard cash, and had incurred liabilities amounting to about £2,000. As against that £7,000 there was hardly anything in the shape of assets, and a complete explanation would be demanded by the creditors and the Court at the proper time. The debtor had embarked in a coal business, and jumped from that into a publishing business. He had entered into partnership with persons who were evidently without capital, and after a few months—very few months—he retired, leaving the business to the new comers. There was no doubt but that he had run up those heavy liabilities at a time when he was hopelessly insolvent. It was arranged to depute the official receiver to act as trustee. No committee of inspection being under these circumstances deemed necessary, the debtor was directed to file his statement of affairs at the earliest date, and to attend in January for his public examination. Appended is a list of the principal creditors :—

G. N. Boothby	£67
Calvert and Tipping...	12
Fielden and Co., Ltd.	29
E. C. Freeman	11
W. W. Head and Co., Ltd...	310
W. Hill and Co.	166
B. F. Linnett	241
London Printing Alliance, Ltd.	235
J. A. Marshall and Co.	45
Miller and Richard	146
North of Ireland Paper Mill Co...	208
R. J. B. Smith	14
G. Toulmin and Sons	14
Trade and Industry, Ltd.	81
Williams Typewriter Co.	12
J. Bewster	117
G. W. Lockwood	174
J. S. Pollock	130
J. Russell	30
W. Watson ... ... — ...	37
... ...	313
F. G. Wright	47

A PAMPHLET on the "Advantages of Converting a Business into a Company with Limited Liability" has been issued by Mr. William John Stokes, managing director of the Imperial Contract Corporation, Limited.

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CROOKES, ROBERTS & Co.,

Argus Works,

SHEFFIELD.

Telegrams: "Argus, Sheffield."

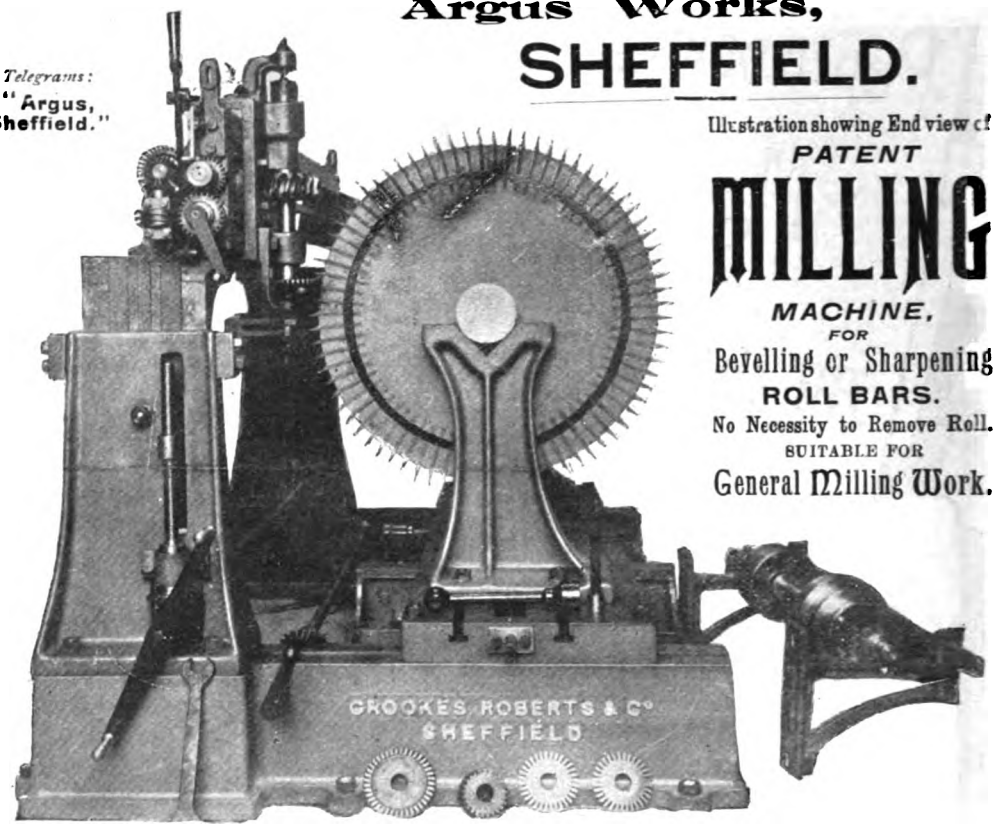


Illustration showing End view of

PATENT

MILLING

MACHINE,

FOR

Bevelling or Sharpening

ROLL BARS.

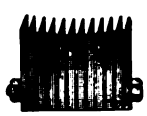
No Necessity to Remove Roll.

SUITABLE FOR

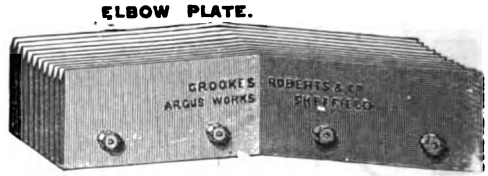
General Milling Work.

RAG ENGINE ROLL BARS AND BED PLATES

In Special Bronze Composition, Q. I. BB Best Refined Crucible Cast Steel, Refined Crucible Cast Steel and Selected Bessemer Steel.



ELBOW PLATE.



CIRCULAR KNIVES,

RAG & ROPE CHOPPER KNIVES,

DOCTOR BLADES,

GUILLOTINE

and all other

MACHINE KNIVES

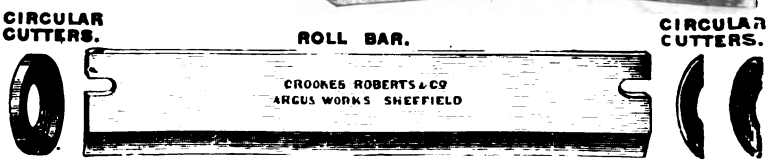
STEAM HAMMERS

Specially adapted for Redrawing Roll Bars.

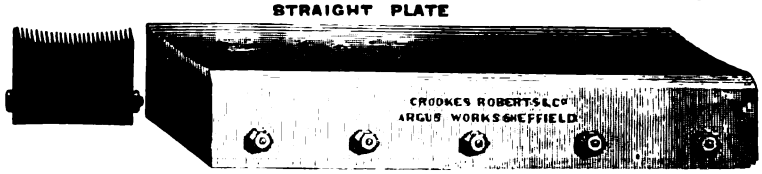
CIRCULAR CUTTERS.

ROLL BAR.

CIRCULAR CUTTERS.



STRAIGHT PLATE



EVERY DESCRIPTION OF TOOLS USED BY PAPERMAKERS.

Printed and Published by W. JOHN STONHILL, 58, Shoe Lane, LONDON, E.C. January 14, 1898.

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EENS'
OMISER
FOR
r Mills
AVES
to 20%
in
OAL
EN & SON, LD
CHANGE ST.
CHESTER

Registered at the General Post Office as a Newspaper

The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 3. LONDON: JANUARY 21, 1898. EVERY FRIDAY. PRICE SIXPENCE.

The Paper Trade of India.

British Exporters Find Austro-Hungary a Strong Competitor.

OFFICIAL STATISTICS.

A review of the trade in India in 1896-97, by Mr. J. E. O'Conor, C.I.E., has recently been issued. The tables relating to the foreign sea-borne trade of B. India will be presented early this year.

The following figures show the value of paper and pasteboard imported into India during the past five years:—

1892-93	... ...	Rx. 436,098
1893-94	... ...	Rx. 494,208
1894-95	... ...	Rx. 347,524
1895-96	... .	Rx. 409,983
1896-97	... ...	Rx. 384,280

It will be seen that the value of the imports for 1896-97 was below the amount for the previous year. The cause is no doubt owing to the fact that Indian paper mills have reduced their prices. Production in India has only been increased very slightly.

The position of the paper industry in India may be gathered from the following comparative figures:—

		1895.	1896.
Capital employed...	Rx.	627,200	627,200
Persons employed	No.	3,594	3,613
Outturn	lbs.	39,927,687	40,707,589
Value of outturn...	Rx.	608,633	587,116

Most of the paper imported into India undoubtedly comes from the United Kingdom, but no mention is made of the extent in the present returns.

Austro-Hungary supplied paper to India in 1896-97 to the value of Rx. 100,321, the amount for the previous year being Rx. 107,158.

The paper received from Belgium was of the value of Rx. 44,696, against Rx. 42,898 in the previous year.

Germany exported paper to India in 1896-97 to the value of Rx. 59,600, against Rx. 58,814 in the previous year.

The gross amount of duty collected at all ports on paper and pasteboard imported, was Rx. 23,364 in 1896-97, against Rx. 25,404 in 1895-96.

A previous return, dealing with the year 1895-96, gives the following classification of the Indian imports of paper:—Printing paper, 72,959 cwts., of the value of Rx. 114,914; writing paper and envelopes, the quantity is not given, but the value is stated to be Rx. 141,698; other kinds of paper, 78,899 cwts., Rx. 146,111; pasteboard, millboard, etc., 8,851 cwts., Rx. 7,260.

As stated above, the total value in 1895-96 was Rx. 409,983. It will give some idea of the extent of British trade when it is stated that the value in 1895-96 of the imports into India of stationery, including paper and printing materials, from Great Britain amounted to Rx. 447,542, as compared with Austria Rx. 133,063, Germany Rx. 72,194, and Belgium Rx. 51,111.

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The American "News" Combine.

To be Known as the International Paper Co.

The combination of the New York State and Eastern States paper manufacturers is regarded as almost assured. There will, it is reported, be seventeen paper companies in the combination, representing a daily output of 1,387 tons.

The officers will include a president, three or four vice-presidents, who will act as heads of departments, a secretary, a treasurer, an executive committee, and a finance committee. There will be a sales department and a manufacturing and construction department.

The full list of the various companies which have joined the combination, with their tonnage per day, is as follows :—

Glens Falls Paper Mill Company, of Glens Falls, N. Y., 275.

Hudson River Pulp and Paper Company, of Palmer's Falls, N. Y., 150.

Otis Falls Pulp Company. of Livermore Falls, Me., 150.

Glen Manufacturing Company, of Berlin Falls, N. H,. 135.

Niagara Falls Paper Company, of Niagara Falls, N. Y., 120.

Rumford Falls Paper Company, of Rumford Falls, Me.. 100.

Fall Mountain Paper Company, of Bellows Falls, Vt., 105.

Winnipiseogee Paper Company, of Franklin, N. H., 70.

Lake George Paper Company, of Ticonderoga, N. Y., 50.

Webster Paper Company, of Bangor, Me., 26.

Montague Paper Company, of Turner's Falls, Mass., 50.

Turner's Falls Paper Company, of Turner's Falls, Mass., 11.

Russell Paper Company, of Lawrence, Mass., 20.

Falmouth Paper Company, of Livermore Falls, Me., 60.

Haverhill Paper Company, of Haverhill, Mass., 40.

Herkimer Paper Company, of Herkimer, N. Y., 25.

Umbagog Pulp Company, of Livermore Falls, Me., —.

It was expected that the Piercefield Falls Pulp and Paper Company, of Piercefield Falls, N. Y., 30 tons; the Gould Paper Company, of Lyons Falls, N. Y., 30 tons; the Ontario Paper Company, 26 tons, and Remington Paper Company, 30 tons, of Watertown, N. Y., with Wilder and Co., of Olcott Falls, N. Y., 40 tons, would also be in shape to go in under the incorporation papers, but it was found they could not arrange matters in a reasonable time, so that these mills will, in all probability, be taken in later, after the organisation has been perfected. The tonnage of the Umbagog Pulp Company is not given in the above list, for the reason that it is now running on wood pulp board. It has been included in the combination because of the natural advantages of its situation.

The plan of operation of the company for the first year will be to permit the various companies to operate their mills and seek to regulate supply at the minimum cost of production. There will naturally be a great deal of detail work, and a great many changes effected in the operation of the plants. The officers will be appointed the first year by a committee of the mill owners, as there are no stockholders to elect at present. The second year the stockholders will elect the officers.

The new company is to be capitalised for 35,000,000 dols. This is to be divided up approximately as follows: Mill valuations, 23,000,000 dols.; working capital, 5,000,000 dols.; woodland and water powers, 4,000,000 dols.; leaving about 3,000,000 dols. treasury stock with which to acquire new mill properties which may be wanted. Certificates are now being engraved for from 10,000,000 dols. to 12,000,000 dols. worth of 6 per cent. bonds. The rest will be issued as preferred stock.

The Price of German "News."

It Leaves No Profit for the Manufacturer.

Prices of "news" in Germany continue unsatisfactory. A German papermaker, in writing on the subject, maintains that the present selling prices leave no margin of profit. In his opinion, the coming year will probably give sufficient occupation to papermakers, but unless they can combine to raise the selling price again to such a figure as will allow a moderate profit a crisis is inevitable. Any one calculating correctly must see that if the cost of production, the wear and tear of machinery, interest, etc.. is added to the cost of the raw material, the selling price shows no longer any profit.

THE German shipping trade shows great expansion during recent years, the operation of the Merchandise Marks Act being regarded as one of the chief causes. According to German statistics the German Merchants' Navy consisted in 1875 of 875,000 tons by sailing and 190,000 tons by steam vessels; total, 1,065,000 tons. In 1896 it had risen to 622,000 tons by sailing and 880,000 tons by steam vessels; total, 1,502,000 tons, or in round numbers, half as much again. It is believed that a large part of the traffic which formerly went to British ports for re-exportation to our colonies now goes there direct without transhipment in England.

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PURE ALKALI

Crescent Brand B.M&Co. Trade Mark.

GUARANTEED 58 DEGREES,

Equal to 98 per Cent. Carbonate of Soda.

The STRONGEST and PUREST Form of the Article in the Market, and therefore the MOST ECONOMICAL for the Use of Papermakers, Printers, Bleachers, Wool Scourers, Dyers, Glass, and Soap Makers.

BICARBONATE OF SODA,

☛ REFINED and RECRYSTALLISED.
The PUREST and CHEAPEST in the Market.

SODA CRYSTALS

OF THE FINEST QUALITY.

Concentrated Crystal Soda

(Sesqui Carbonate)

By far the PUREST and CHEAPEST Form of Washing Soda. Only 1-lb. of Concentrated Crystal Soda required to do the Work of 2-lbs. of Washing Soda.

BRUNNER, MOND & CO., LTD.

NORTHWICH, CHESHIRE.

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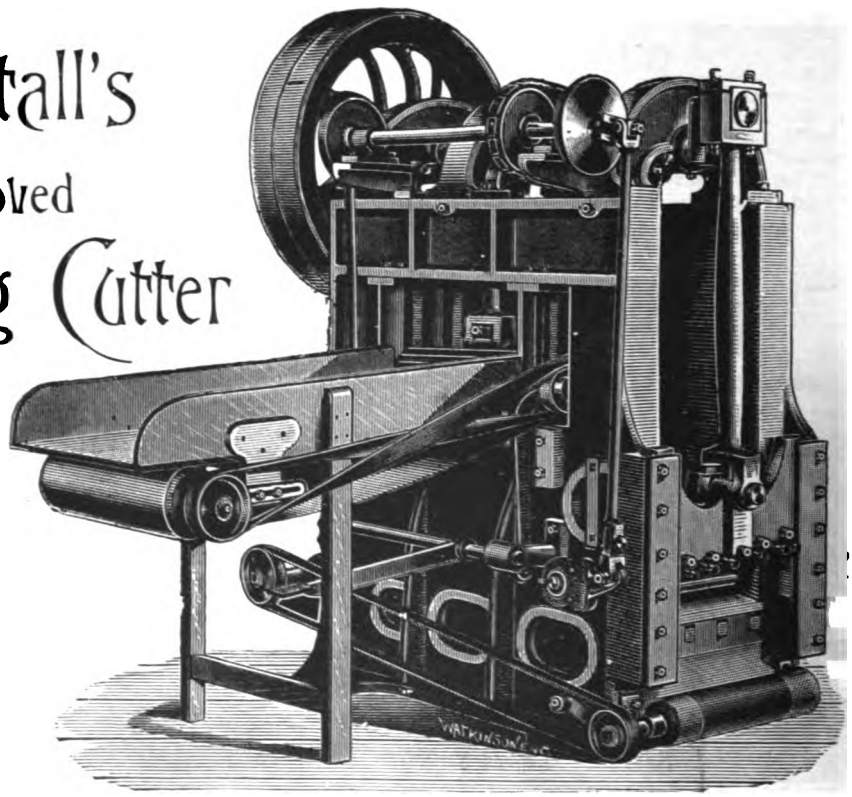
BENTLEY

Papermakers

BURY, near

Nuttall's Improved Rag Cutter



This Machine has now been Greatly Strengthened and Simplified, and its Output Capacity Increased. It is Equally Effective upon the Strongest and Lightest Materials, and will Cut Every Class of Stock.

Sole British Makers of th

NO WELL EQUIPPED PAP

FULL PARTICULAR

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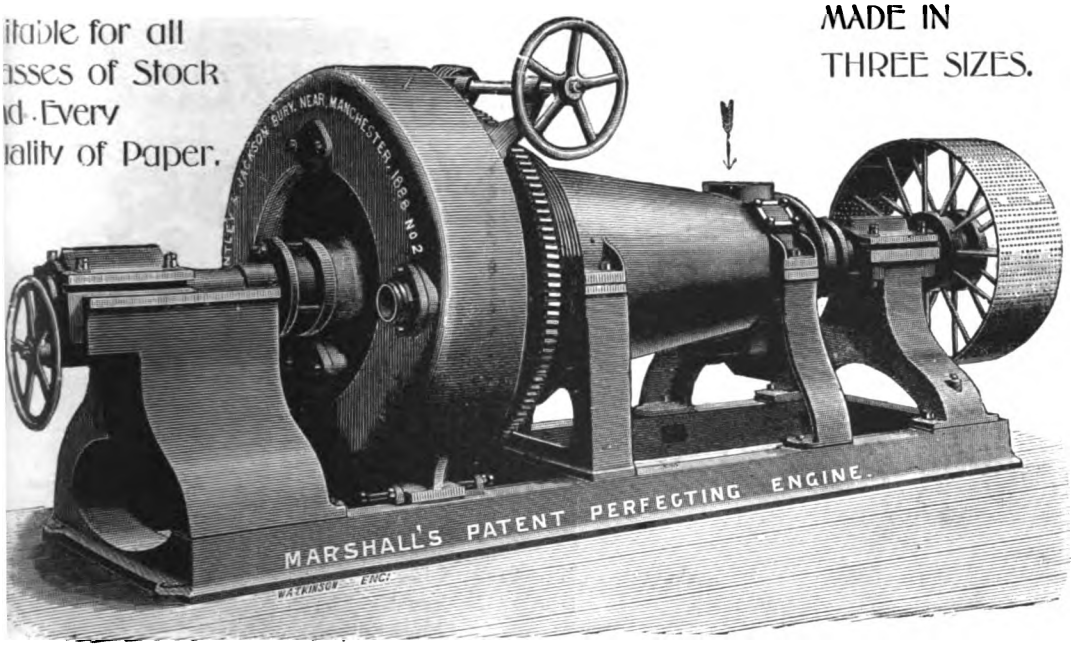
JACKSON
LIMITED.

ngineers,
IANCHESTER.

Marshall's Patent Perfecting Engine

itable for all
asses of Stock
d Every
ality of Paper.

MADE IN
THREE SIZES.



This Engine will produce a Better Finished, Stronger, and More Even Sheet of Paper from the same Materials than can be produced by any other Mechanical Process, and at the same time will REDUCE the TIME and POWER Required for Beating.

OBURN-TAYLOR Machine.

LL SHOULD BE WITHOUT.

N APPLICATION.

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A. WERTHEIM & Co.,

HAMBURG,

SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquieu 96.
MILAN	Via Prine Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	90, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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German Chemical Wood Pulp.

Manufacturers Decide to Exhibit at the Paris Exhibition.

The chemical pulp makers of Germany lately met at Berlin. Among the subjects discussed was the desirability of obtaining lower carriage on pulp on the German State railways.

It was resolved to give a fair representation to the German chemical pulp trade at the 1900 Paris Exhibition. This object would be best obtained by having a joint collection, in order to give an idea of the whole trade.

The various exhibits are first to be submitted to a jury of pulp makers, which in its selection will be best able to represent the interests of the trade.

AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
11 cases	Antwerp	Vandergrift and Co	New York
5 ,,	,,	Stiner and Co	,,
16 ,,	,,	P. Ruttmann	,,
20 ,,	,,	J. W. Hampton	,,
1 bale	,,	Doob and Waubord	,,
22 cases	,,	Vandergrift and Co	,,
9 ,,	,,	Aloe and Co	,,
12 ,,	Bremen	Sheldon and Co	,,
3 ,,	,,	I. Vogt and Co	,,
41 ,,	Bordeaux	E. Fougera and Co	,,
4 ,,	Hamburg	H. Boskowitz	,,
3 ,,	,,	T. C. Pollock	,,
34 bales	,,	Dingelstedt and Co	,,
36 cases	Havre	American Tobacco Co	,,
44 ,,	,,	Druckleib and Co	,,
5 ,,	London	Dickinson and Co	,,
41 ,,	,,	Dennison Mfg. Co	,,
2 bales	,,	Graves and Co	,,
11 cases	,,	E. Morgan Sons	,,
51 ,,	,,	R. E. Thibault	,,
2 bales	,,	J. P. McHugh	,,
1 cases	,,	G. J. Kraft	,,
28 rolls	,,	Frost and Adams	Boston
3 cases	Liverpool	Dennison Mfg. Co	,,
5 ,,	,,	Frost and Adams Co	,,
2 ,,	,,	To order	,,
14 ,,	Rotterdam	Eagle Paper Co	New York
3 ,,	,,	H. S. Leclercq	,,
7 ,,	,,	Miller, Sloane & Wright	,,
29 ,,	,,	Hensel, Bruckmann	,,
14 ,,	,,	Eagle Paper Co	,,
8 ,,	,,	De Jonge and Co	,,
4 ,,	Yokohama	Delacamp and Co	,,

MANILLAS.

172 bales	Antwerp	Jessup & Moore	Philadelphia
40 coils	Glasgow	Castle and Gotheil	,,
23 ,,	Hamburg	Salomon and Co	,,
39 ,,	,,	E. P. True	Boston
145 ,,	Liverpool	Train, Smith and Co	,,
147 ,,	,,	,,	,,
79 coils	,,	H. Dutton and Co	,,
94 bales	,,	Butterworth and Co	,,
100 ,,	,,	,,	,,
28 ,,	London	E. P. True	,,
89 coils	,,	Dutton & Co	,,

RAGS.

Quantity	From	Importer	Port
22 bales	Glasgow	E. P. True	Boston
469 ,,	Dunkirk	J. Pirnie	New York
156 ,,	Hamburg	Levy and Co	,,
6 ,,	,,	Castle and Gotheil	,,
271 ,,	,,	Salomon and Co	,,
78 ,,	,,	A. Kazenstein	,,
45 ,,	,,	Lewy Bros	,,
73 ,,	,,	Train, Smith & Co	Boston
138 ,,	,,	Salomon and Co	,,
181 ,,	Hull	Lewy Bros	New York
182 ,,	Liverpool	J. Pirnie	,,
13 ,,	,,	Darmstadt and Scott	,,
11 ,,	,,	E. P. True	Boston
21 ,,	,,	Dutton and Co	,,
9 ,,	,,	Butterworth & Co	,,
51 ,,	London	Train, Smith & Co	New York
128 ,,	Rotterdam	Jessup & Moore	,,
123 ,,	,,	J. Pirnie	,,
244 ,,	,,	Jessup and Moore	,,

PAPER STOCK.

81 bales	Glasgow	Butterworth and Co	Boston
80 ,,	,,	Wheelwright Paper Co	,,
128 ,,	,,	Crocker, Burbank & Co	,,
107 ,,	,,	Dutton and Co	,,
57 ,,	,,	Castle and Gottheil	,,
57 ,,	,,	Train, Smith and Co	,,

WASTE PAPERS.

51 bales	Glasgow	E. P. True	Boston
36 ,,	,,	Wheelwright Paper Co	,,
10 ,,	Liverpool	Butterworth and Co	,,
97 ,,	London	Wheelwright Paper Co	,,
21 ,,	,,	Darmstadt & Scott	N. York
32 ,,	,,	E. S Ryder	,,
39 ,,	,,	Castle and Gotheil	,,

BLEACHING POWDER.

190 cks.	Antwerp	Klipstein and Co	New York
237 bdls.	,,	Brown Bros.	Philadelphia
50 cks.	Hamburg	Roessler & Hasslacher	N. York
229 ,,	Liverpool	J. L. & D. S. Riker	,,
39 ,,	,,	Fuerst Bros	,,
50 ,,	,,	Troy Laundry Co	,,
603 ,,	,,	J. L. & D. S. Riker	Boston
75 ,,	Marseilles	F. A. Reichard	New York

CAUSTIC SODA.

30 drums	Liverpool	Troy Laundry Co	New York
100 ,,	,,	Crooks and Co	,,
250 ,,	,,	Hill's Son & Co	,,
100 ,,	,,	Crooks and Co	,,
50 ,,	,,	Hill's Son & Co	Boston
100 ,,	,,	,,	Philadelphia

SODA ASH.

1850 bgs.	Liverpool	Wing and Evans	New York
165 cks.	,,	,,	,,
360 bgs.	,,	,,	Boston
35 cks.	,,	,,	,,
34 ,,	,,	Warren and Co	,,
400 bgs.	,,	Morey and Co	,,
20 ,,	,,	Brown Bros	Philadelphia

SIZING.

157 bgs.	Liverpool	Groom and Co	Boston
150 ,,	,,	Baeder, Adamson & Co	,,
121 ,,	,,	Train, Smith & Co	,,
197 ,,	,,	Butterworth and Co	,,

SODA CRYSTALS.

140 cks.	Liverpool	J. Marble	Boston

ALKALI.

400 bgs.	Liverpool	Morey and Co	Boston

SULPHUR.

1335 bgs.	Liverpool	Linder & Meyer	Boston

COLOURS.

20 bdls.	Antwerp	Andrey Kovicz & Co	Philidphia

CHINA CLAY.

30 cks.	Antwerp	Brown Bros	Philadelphia

THE WORLD'S PAPER TRADE REVIEW, the leading European exponent of the paper trade.—*American Paper Trade and Wood Pulp News.*

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The Esparto Trade.

Messrs. Ide and Christie, in their monthly circular for January, dated the 15th, report:—It may be set down that the most noteworthy features in the trade of the past year were the remarkable recovery in the quantity imported (and consumed), and the gradually widening difference in value between Spanish and African. There is little doubt that three years ago somewhat pessimistic views were entertained as to the future of the trade. That it has not only survived but, in point of quantity, recovered nearly its fullest former vigour, is a proof of its commercial vitality and capacity of adjustment to new conditions. In this connection it may be perhaps not irrelevant to recall what was written in this circular 15 years ago, when wood pulp began to attract the very serious attention of papermakers:—"It must not be overlooked that esparto is a waste product requiring no cultivation, that the soil on which it grows is capable of yielding no other crop, and that in the early days of the trade Spanish grass was sold, and sold at a profit, at £4 10s. per ton delivered in England, and this price, with corresponding rates for African, might be, and probably would be, seen again before esparto ceased to be the staple article for papermaking it is to-day." When those words were written the price of Spanish was £8 12s. 6d., Algerian £7, and Tripoli £6 15s. per ton. To-day Spanish ranges from £4 10s. to £5 7s. 6d., African from £2 15s. to £3 5s., and these values, taken in conjunction with the twelve months' import, go far to prove the accuracy of the forecast made in 1883. An analysis of last year's statistics shows that Scotland with a consumption of 113,399 tons has exceeded the large figure of 1896, although the percentage of U.K. import is reduced from 60 to 55¾. A revival of consumption in Lancashire is manifested by an increase in the importations from 30,797 tons to 37,280, while the North-East of England has received through its Tyne and Wear ports 8,712 tons more than in 1896.

FOREIGN PAPER RE-EXPORTED.—The following statistics show the total re-exports of foreign paper from British ports:—

December,	1897	9,427 cwts.	£9,944
,,	1896	5,702 ,,	6,941
,,	1895	8,768 ,,	5,735
Jan.-Dec.	1897	98,400 cwts.	£85,243
,,	1896	92,469 ,,	75,136
,,	1895	107,413 ,,	86,055

EXPORTS OF PAPER HANGINGS.—The following statistics show the exports of paper hangings from Great Britain:—

December	1897	6,179 cwts.	£14,620
,,	1896	6,095 ,,	15,158
,,	1895	5,366 ,,	12,987
Jan.-Dec.	1897	73,945 cwts.	£175,170
,,	1896	72,365 ,,	172,041
,,	1895	64,316 ,,	148,204

The Manchester Ship Canal.

Arrivals of Paper and Papermaking Materials.

The steamer Barcelona, of the Canada and Newfoundland line, which trades regularly between Nova Scotia, Newfoundland, Liverpool, and Glasgow, arrived recently at the Ship Canal from Halifax with a large general cargo for Manchester, including 12,000 bales of wood pulp. The following vessels have discharged papermaking materials, and paper in the Manchester Ship Canal since our last report:—Borregaard (steamer), 4,846 bales of wood pulp and 139 rolls of paper, from Sarpsborg; Whimbrel (steamer), 40 bales of wood fibre and and 6 bags of papermaking material from Ghent, and 46 bales of paper from Antwerp; Pioneer (steamer), 58 bales of papermaking materials from Rouen; Lestris (steamer), 68 bales of paper, 1,947 packages of strawboards, and 800 packages of wood pulp from Rotterdam; Cato (steamer), 115 cases of wood pulp boards, 900 bales of wood pulp, and 203 bales of paper from Drammen, 147 bales and 18 reels of paper, and 1,480 bales of wood pulp from Skein, 4,030 bales of wood pulp, 78 bales of papermaking materials, and 156 bales of paper from Christiania, and 156 bales of paper from Christiansand; Stormarn (steamer), 75 rolls, 179 bales, 13 cases, and 4 bundles of paper from Hamburg; Ibis (steamer), 36 bales of papermaking materials and 5 bales of paper from Ghent, and 76 bales of paper from Antwerp; Bellanoch (steamer), 550 rolls and 145 bundles of paper, 413 bundles of wood pulp boards, and 608 bundles of strawboards from New York; Thyra (steamer), 23 bales of paper and 2,072 bundles of pulp boards from Stettin, and 133 bales of paper from Copenhagen; Mauritius (steamer), 13 packages of paper from Bordeaux; Barcelona (steamer), 11,806 bales of wood pulp from Halifax, N.S.

THE co-partnership existing between Felix Salomon and Albert Salomon, under the firm style of Felix Salomon and Co., paper stock importers, 99, Nassau-street, New York, has been dissolved, and whenever necessary Albert Salomon will sign in liquidation. Felix Salomon and Peretz Rosenberg have formed a co-partnership under the firm style of Felix Salomon and Co., and will carry on the business of importing papermakers' supplies, at Room 84, Morse Building, 140, Nassau-street, New York, they being the American agents of Gebr. Rosenberg, Elmshorn, near Hamburg, Germany. Albert Salomon and William Salomon have formed a co-partnership under the firm style of Salomon Brothers and Co., and will continue the business of importing papermakers' supplies, at Rooms 709 and 710, Bennett Building, 99, Nassau-street, representing Salomon Brothers, of Harburg and Hanover, Germany.

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THE

UNITED WIRE WORKS

LIMITED.

Manufacturers of

Paper Machine Wires

(up to 174 inches wide)

Plain Phosphor Bronze, Platine, Electro and Special Metal.

Presse Pate Wires,

Plain, Twisted, Tinned Twisted, and Phosphor Bronze.

Dandy Rolls,

Laid, Wove and Spiral with Watermarking.

Brass, Copper, Steel & Iron Wire Cloth,

All Sizes, Meshes and Gauges.

Enquiries, Orders or Communications may be addressed to any of the Company's Works:

EDINA WORKS, LEITH WALK, EDINBURGH.

BALTIC WIRE WORKS, DALE STREET, BRIDGETON, GLASGOW.

GREAT EASTERN WIRE WORKS, GLASGOW.

TRAFALGAR WIRE WORKS, NEWCASTLE-ON-TYNE.

Registered Office:

EDINA WORKS, LEITH WALK, EDINBURGH.

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AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
7 cases	Antwerp	G. A. and E. Meyer	New York
21 ,,	,,	J. W. Hampton	,,
20 ,,	,,	A. V. Benoit	,,
16 ,,	,,	P. Ruttmann	,,
1 ,,	,,	E. Hawley	,,
100 ,,	,,	Dingelstedt and Co	,,
3 ,,	,,	O. F. Melvin & Co	,,
18 ,,	,,	Kupfer Bros	,,
9 ,,	,,	Eagle Paper Co	,,
3 ,,	,,	L. C. Wagner	,,
21 ,,	,,	Vandergrift and Co	,,
4 ,,	Havre	P. Moresi	,,
1 ,,	,,	Iilfelder and Co	,,
1 ,,	,,	De Jonge and Co	,,
35 ,,	,,	Drucklelb and Co	,,
7 ,,	,,	Sheldon and Co	,,
77 ,,	Hamburg	De Jonge and Co	,,
4 ,,	,,	A. Kraut	,,
1 ,,	,,	Richard and Co	,,
1 ,,	,,	E. Fischer	,,
10 ,,	,,	De Jonge and Co	,,
9 ,,	Hull	J. Hunter	,,
12 ,,	London	Dickinson and Co	,,
26 ,,	,,	Knauth, Nachod & Co	,,
10 ,,	,,	Atkins and Co	Boston
6 bales	Liverpool	Dennison Mfg. Co	,,
4 ,,	,,	Henderson Bros	New York
4 ,,	,,	Dingelstedt and Co	,,
4 ,,	,,	E. Kimpton	,,
6 ,,	,,	B. and O. Meyer	,,
37 ,,	Marseilles	Sheldon and Co	,,
18 ,,	Rotterdam	De Jonge and Co	,,
59 ,,	,,	Hensel, Bruckmann	,,
1 ,,	,,	Eagle Paper Co	,,
2 ,,	,,	Anthony and Co	,,

MANILLAS.

115 bales	Dundee	Train, Smith & Co	New York
251 coils	Hull	Dutton and Co	Boston
33 bales	,,	,,	,,
108 ,,	Liverpool	Butterworth and Co	,,
13 ,,	,,	,,	,,
328 ,,	,,	,,	,,
471 coils	,,	Dutton & Co	,,
400 bales	,,	To order	Philadelphia

RAGS.

246 bales	Antwerp	J. Pirnie	New York
378 ,,	,,	Castle and Gothell	,,
45 ,,	,,	Train, Smith and Co	,,
49 ,,	Hamburg	Salamon Bros	,,
26 ,,	,,	A. Kazenstein	,,
128 ,,	,,	Lewy Bros	,,
180 ,,	,,	Salomon and Co	Boston
80 bales	Hull	T. F. Ring	Boston
83 ,,	,,	Train, Smith and Co	,,
296 ,,	,,	Dutton and Co	,,
277 ,,	,,	Butterworth & Co	,,
3 ,,	,,	Lewy Bros	New York
42 ,,	,,	Libmann and Co	,,
210 ,,	Leghorn	Jessup & Moore	,,
159 ,,	Liverpool	J. Pirnie	,,
855 ,,	,,	Train, Smith & Co	Boston
55 ,,	,,	Butterworth and Co	,,
289 ,,	London	E. P. True	,,
19 ,,	,,	Butterworth and Co	,,
52 ,,	,,	W. F. Corne	,,
1200 ,,	Yokohama	Warren and Co	New York
1200 ,,	,,	Avis & Co	,,
510 ,,	,,	Delacamp and Co	,,

WASTE PAPERS.

332 bales	Antwerp	A. Katzenstein	New York
60 ,,	Liverpool	J. Pirnie	,,
104 ,,	,,	Train, Smith & Co	Boston
23 ,,	,,	Butterworth and Co	,,
81 ,,	London	Train, Smith and Co	,,
370 ,,	,,	E. S. Ryder	New York

BLEACHING POWDER.

275 drums	Antwerp	Roessler & Hasslacher	N. York
60 ,,	,,	F. A. Reichard	,,
114 cks.	,,	Fuerst Bros	,,
50 ,,	Hamburg	Roessler & Hasslacher	,,
93 ,,	Hull	Fuerst Bros	,,
47 ,,	Liverpool	Reed, Halliday & Co	,,
582 ,,	,,	J. L. & D. S. Riker	,,
390 ,,	,,	,,	Boston
25 ,,	,,	J. Marble & Co	,,
24 ,,	,,	A. Turnbull	,,

CAUSTIC SODA.

250 drums	Liverpool	Hill's Son & Co	New York
170 ,,	,,	J. L. and D. S. Riker	,,
40 ,,	,,	Hill's Son & Co	Boston
50 ,,	,,	Downing and Co	,,
200 ,,	,,	Hill's Son & Co	Philadelphia
75 kgs.	,,	To order	,,

SODA ASH.

1200 bgs.	Liverpool	Wing and Evans	New York
400 ,,	,,	Morey and Co	Boston
33 cks.	,,	,,	,,
400 bgs.	,,	Wing and Evans	,,
80 ,,	,,	,,	,,
14 cks.	,,	,,	,,
60 ,,	,,	Warren and Co	,,
1600 bgs.	,,	To order	Philadelphia
124 tcs.	,,	,,	,,

SIZING.

160 bgs.	Liverpool	Butterworth and Co	Boston
50 ,,	,,	Warren and Co	,,

WOOD FIBRE.

424 bales	Hull	Schulze & Ruckgaber	Boston

SULPHUR.

667 bgs.	Liverpool	Linder & Meyer	Boston

JUTE.

54 bales	Liverpool	Bailey & Co	Philadelphia

Sensational Novelty! For the Million!

Required a Suitable Firm for the Sale of

A PATENT SAFETY PAPER COVER FOR WATER CLOSETS,

RINSED DOWN WHEN PLUG IS DRAWN.

Only First-Class, Well-Introduced Firms need apply to No. 3,100, Office of the "World's Paper Trade Review," 58, Shoe-lane, London, E.C.

DETERGENT

For Steam Boilers and for Softening Water.

Precipitated Chalk, Salts of Tartar,

PEARL ASHES. 3099

Hyposulphite of Soda, Sulphite of Soda, Borax, Glauber Salts, Epsom Salts, Alum.

E. BRAMWELL & SONS,

ST. HELENS, LANCASHIRE.

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CROOKES, [illegible] & Co.,

SHEFFIELD.

PATENT

MILLING

MACHINES

FOR

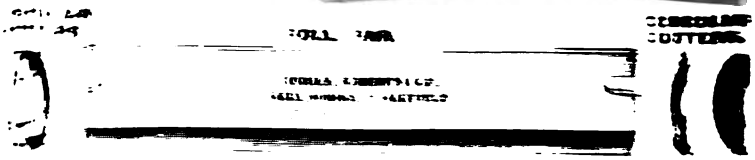
Bevelling or Sharpening

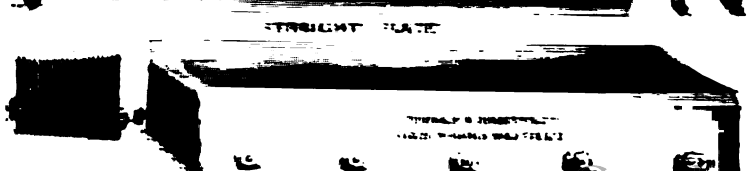
ROLL BARS.

SUITABLE FOR

General Milling Work.

GAS ENGINE ROLL BARS & BEVEL PLATES





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THE British Wood Pulp Association.

Statements, held to Mislead Foreign Associations, Severely Criticised.

We have received the following communication from Messrs. Ince, Colt and Ince, solicitors, of St. Benet Chambers, Fenchurch-street, E.C., with a request to publish the accompanying correspondence :—

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—Enclosed we send you copy of certain correspondence which passed between ourselves and *Wood Pulp*, and the Secretary of the British Wood Pulp Association, with reference to the gross mis-statements contained in the issue of *Wood Pulp*, dated the 9th December last, that a Commercial Court does not exist in London, and has not done so for some years.

This correspondence has resulted in the gentleman, who acts as Secretary of the British Wood Pulp Association and editor of *Wood Pulp*, publishing some further remarks under the head of "The Scandinavian Contract Note and the Law-Arbitration Option," in his issue of the 10th inst.

As he now admits the existence of the Court and its good points, we do not intend to move the Court for his committal for contempt. The article, however, in the issue of the 10th January is so interspersed with illogical and incorrect remarks that we think it would be to the advantage of the foreign Associations if you publish our correspondence.

Most of the remarks in the last article referred to consist in a play upon words; but there are two coherent mis-statements which we should be obliged if you would correct. First, the denial that suitors have not the option of getting their cases tried in the Commercial Court.

If the dispute is a commercial dispute, either the plaintiff or the defendant has the absolute right of having his case tried in this Court. Whatever Court a defendant may have been sued in he has only got to take out what is called a summons to transfer and for directions, and the Judge of the Commercial Court will order the transfer of the case to his Court.

Of course, to be perfectly accurate the title of the Court should be the Court for the Trial of Commercial Cases; but for the sake of brevity it has got to be known as the Commercial Court.

Again, it is untrue to say that the Judges who try these cases do not exercise special and distinct functions. As a matter of fact they exercise many special and distinct functions, but to enable a layman to appreciate them would involve a lengthy treatise on the practice of this and other courts.

Yours obediently,
INCE, COLT & INCE.

Jan. 17th, 1891.

COPY OF CORRESPONDENCE.

To the Editor of WOOD PULP.
7, Upper Thames-street, E.C.

DEAR SIR,
Re the British Wood Pulp Association, Executive Meeting held on the 25th November, of which you published a report on page 409 of your issue of the 9th December last.

We should like to know the names of the Committee of this Association, as they are clearly not qualified to act in such a capacity, having regard to the resolution which they passed that a Commercial Court does not exist in London, and has not done so for some years.

The Commercial Court is a Division of the High Court, and was created at the beginning of the year 1895, and the business of that Court, which has been so ably presided over by Mr. Justice Mathew, Mr. Justice Collins, and Mr. Justice Bigham, is steadily increasing, as the reports of the Court show, although it must be borne in mind that not half the cases which the Court deals with are reported. Furthermore, it is the speediest and most economical Court that this country has seen, and that this is so is universally acknowledged by merchants of the City of London.

The ignorance of the Committee of the British Wood Pulp Association, if it was mere ignorance, would be inexcusable; but we cannot believe that if any of the gentlemen on this Committee are gentlemen of the City of London, that they can have been ignorant of the existence of this Court; and no excuse can be found for gentlemen who wilfully try to deceive secretaries of foreign associations by gross misstatement.

Yours faithfully,
INCE, COLT & INCE.

St. Benet Chambers,
Fenchurch-street, London, E.C.
December 18th, 1897.

To Messrs. INCE, COLT & INCE,
St. Benet Chambers.

DEAR SIRS,
We beg to acknowledge with thanks receipt of your subscription for 1898 for *Wood Pulp*, and enclose receipt herewith.

We also acknowledge receipt of your letter re Committee of British Wood Pulp Association for publication, which has our attention.

We are, yours faithfully,
WOOD PULP, Limited.
JAS. DUGUID, Secretary.

7, Upper Thames-street, London, E.C.
December 20th, 1897.

To Jas. DUGUID, Esq.,
Secretary of *Wood Pulp*, Ltd.,
7, Upper Thames-street, E.C., and

To Jas. DUGUID, Esq.,
Secretary of the British Wood Pulp Association,
7, Upper Thames-street, E.C.

DEAR SIR,
We are in receipt of your letter of yesterday's date, but you do not say that it is your intention to publish our letter of the 18th inst., addressed to *Wood Pulp*, in your next issue. We must ask you to give us your undertaking not only that you will publish our letter in your next issue, but we must also ask you to publish an apology to the Court, as failing this we shall have no alternative but to move the Court at the commencement of next Sittings for an order for your committal for contempt.

Statements like those contained in your issue of the 9th inst. cannot be allowed to pass. The mere denial of the existence of a Court of Justice, so far as persons resident in this country are concerned, is of small moment; but it becomes a serious matter when such statements are printed in trade journals with the object of deceiving foreign trade associations. The incorrectness and untruthfulness of the statements contained in your issue of the 9th instant are bad enough, but we yesterday received a copy of a letter which you had written to the secretary of a foreign trade association containing, if possible, more incorrect statements than those contained in your paper, *Wood Pulp*, for the December.

Yours faithfully,
INCE, COLT & INCE.

St. Benet Chambers,
Fenchurch-street, London, E.C.
December 21st, 1897.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

"THE HISTORY OF THE FOURDRINIER PAPERMAKING MACHINE."—The *Papier Zeitung* refers to the lengthy articles in the *World's Paper Trade Review* upon the history and growth of the construction of the Fourdrinier paper machine. Our German contemporary says, the articles—together with the drawings and description of the construction by Robert and Donkin, taken from the original Letters Patent—deserve the consideration and attention of all those who take an interest in the history of papermaking.

SEVERAL changes are contemplated at a large Kentish mill turning out news. There is some talk of a manager at the present time connected with a northern mill, and well known for his go-ahead propensities and up-to-date knowledge in the matter of fast-running and wide machines, being engaged. Perhaps it may be only rumour!

NEW CHIMNEY AT BROAD DUMERS WORKS.—On Monday last an interesting ceremony took place at Messrs. John Wild and Sons, paper manufacturers, Radcliffe, in the laying of the foundation for a new chimney. The first brick was laid by Master John Percival Wild, in the presence of Mr. and Mrs. Walter Wild (parents), the Misses Alice Winifred and Audrey Wild, daughters of Mr. James Herbert Wild, Mr. C. Dennis, Mr. C. Dennis, Mr. A. Dennis, and Mr. George Temperley, head engineer of the firm. The first brick being well and truly laid by Master John Percival Wild, the remainder of the company proceeded to lay several more bricks, which concluded an interesting event. The new chimney is intended to replace the present small one, the original chimney built when the firm was first established, but owing to the growth of the works it has become altogether inadequate for the present requirements. The dimensions of the new structure will be about 180 feet high from the ground line, 16 feet diameter at the base, and 8 feet 6 inches diameter at the top. It will be circular in section and stands on a concrete base about 23 feet diameter and 5 feet thick. The work of erecting the new chimney has been entrusted to Mr. C. Dennis, of Bury, whose reputation for this class of work is now well known in the locality and other parts of the Kingdom.

THE IMPERIAL INSTITUTE AND THE CITY.—The Lord Mayor will lay before the Court of Common Council at its next meeting a letter from the hon. sec. and director of the Imperial Institute asking, if practicable, that accommodation may be afforded to the institute in the Guildhall Library to enable the executive authorities to arrange and maintain a commercial and industrial news room, and to open a small branch office of the Commercial and Industrial and Intelligence Department of the Imperial Institute.

MESSRS. A. M. PEEBLES AND SON, LTD., have dispensed with the services of Mr. Soutar, the mill manager.

MR. LITTLEWOOD, foreman at Ely Paper Works, Cardiff, is, we understand, leaving the employ of Messrs. Thomas Owen and Co., Ltd.

THE PAPERMAKERS' ASSOCIATION.—A sheet calendar for 1898 has been issued by the Papermakers' Association. It contains portraits of the president, Sir John Evans, K.C.B., F.R.S., etc., and of the vice-president, Capt. Partington, together with a list of the names of the members of the northern and southern committee. The objects of the Association are set forth, and information of value to the trade is given in the form of trade customs, sizes of paper, postal information, etc. The objects of the British Wood Pulp Association are also briefly mentioned, together with a list of officers.

A FINE SPECIMEN OF WATERMARKING.—Messrs. T. J. Marshall and Co., of Campbell Works, Stoke Newington, N., have an excellent reputation for the excellency of their methods of watermarking. As usual, this firm is sending out a watermarked calendar for 1898, a most useful and unique production, and well represents their system of patent watermarking. There are three portraits at the top showing the Right Hon. the Lord Mayor, Mr. Alderman and Sheriff Frank Green, and Mr. Sheriff Thomas R. Dewar. At the foot, the name of T. J. Marshall and Co. is prominently set forth, the other lettering being "up-to-date dandy rolls" (with designs), "the largest makers in the world," and the address, etc. The production shows the excellence of Messrs. T. J. Marshall and Co.'s process, and at the same time it is claimed that the method, whilst being superior, is also more economical compared with the old style. Undoubtedly great clearness is obtained, letters, cyphers, and marks showing up much cleaner in the sheet. It may be noted that the firm has been established since 1792. This is the eighteenth year of the publication of the watermarked calendar.

RYBURNDALE PAPER MILL CO., LTD.—The employees of this company were invited to a soiree on Saturday evening, the 22nd inst., in one of the Ripponden school-rooms, and in response, about 100 sat down to a substantial meat tea, presided over by Mr. Thomas B. Tabb, the managing director of the company. After full justice had been done to the ample repast provided, Mr. A. B. Pearce, foreman of the mill, in proposing the toast to the "Success and Prosperity of the Firm," and in returning thanks for their liberality, congratulated them on the position they had achieved in the trade and the many internal improvements which had been effected since the present firm took over the works some two years ago. Mr.

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A. J. Smith, one of the oldest hands present, seconded the motion, and this was supported by Mr. W. H. Bailey, the accountant. Mr. Thos. B. Tabb, in acknowledging the toast, thanked the employees for their co-operation in helping to bring about so desirable a result, and pointed out that every effort must be made both by the management and employees of a works if they are to maintain their position in these times of keen foreign and home competition. Mr. Henry S. Tabb, manager, in a few terse remarks, expressed the pleasure it gave him in meeting the company present at their first social gathering, and hoped it would be the first of a series of successful meetings. After a well-filled programme of dances, interspersed with songs, the company broke up at 11 o'clock with unanimous opinions that the whole affair had been an unqualified success.

"DIE FABRIKBUCHHALTUNG."—This is a treatise on book-keeping in German, by Heinrich Pachmann, and published by Johann Künstner, Leipa i. Böhmen, at six marks (paper covers), and seven marks (in cloth). Book-keeping by double entry is fully dilated upon, and many examples are taken from the experiences in paper mills. Anyone understanding German sufficiently to study this work will no doubt derive many advantages from it. Unless a papermaker keep his books properly he will not be able to know whether he works with a margin of profit in these times of constant undercutting.

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

2948 b	Delfyzl	Grangemth	10520 b	Leer	Grangemouth
3975 ,,	Rotterdam	London			

WOOD PULP BOARDS.

6 c	Boston	London	720 b	Hambro	Hull
83 b	Gothenburg	Granton	248 ,,	New York	Manchter
79 ,,	,,	Hull	20 ,,	Gothenburg	,,

PASTEBOARDS.

51 b	Malmo	Grimsby	2562 b	Harlingen	Leith
41 ,,	Hambro	,,	40 ,,	Rotterdam	London
250 c	New York	Liverpool	3436 ,,	Harlingen	,,
400 b	,,	Manchester	17 c	Hambro	,,

MILLBOARDS.

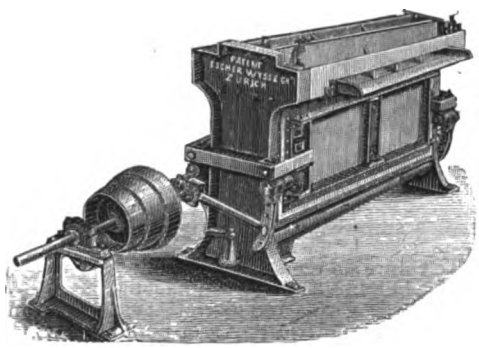
2750 b	Harlingen	Hull	6919 b	Delfyzl	Goole
717 ,,	,,	,,			

b—bales. c—cases. r—rolls. cr—crates.

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

OVER 100 AT WORK.

FACTS SPEAK FOR THEMSELVES—

The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES—

SUPERIOR to any other System for its Numerous Advantages as:

Large Production with any kind of Pulp.
No Stoppage for Cleaning.
Most Regular and Quite Noiseless Working
Little room taken up on the Machine, &c.

AGENT—

ALPH. STEIGER C.E.

16. MINCING LANE, LONDON, E.C.

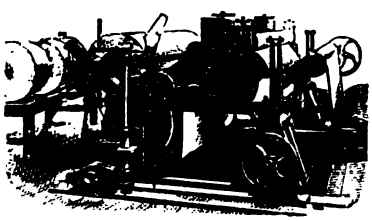
BERTRAMS LIMITED,
ST. KATHERINE'S WORKS, SCIENNES,
EDINBURGH,

Have for Sale—

CHILLED CALENDER ROLLS of various sizes.

STRAINER PLATES, suitable for fine and coarse papers.

STEAM ENGINES, up to 14-inch cylinders, &c., &c. 3047



PATENT SLITTING & WINDING MACHINE FOR WEBS OF ANY WIDTH

PAPERMAKING MACHINERY.

JAMES MILNE & SON, LTD.

MILTON HOUSE WORKS EDINBURGH.

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A Paper Agent's Failure.

Re William Charles Freeman.

The public examination of this bankrupt took place before Mr. Registrar Hope at the London Bankruptcy Court, on the 20th January, the accounts showing total liabilities £3,900 6s. 2d. (unsecured £3,383 6s. 2d.), and assets £294. The bankrupt traded as William Freeman, at 17, New Bridge-street, E.C. He stated, in reply to Mr. H. Brougham, official receiver, that he originally commenced business many years ago at 27, Leadenhall-street, where, in 1887, he was made bankrupt, with liabilities £880. A dividend of 9d. in the £ was paid to the creditors, and an immediate discharge was granted in May, 1889. Witness after that failure acted for a time as a commission agent in the paper trade, but in 1890 he resumed business as a paper merchant under the style of Wm. Freeman, at 3, Milk-street-buildings, E.C., removing to his present address in 1892. He attributed his present insolvency to bad debts; depreciation in the value of his house, and to Stock Exchange losses. The bad debts amounted to upwards of £2,000, and appeared in certain books of account that he had only produced that day. Mr. Brougham: How came it that a man in a small way of business as you were made such heavy bad debts? Bankrupt: Well, I got good references but was unfortunate with my customers. Q.: There must have been something wrong with your system, surely? A.: No. I took the usual precautions by having inquiries made through Stubbs and others. Examination continued: The bulk of the bad debts were in sums of £250 to £350, the chief one being the General Publishing Company, who paid a small composition under a private arrangement. Witness first began to speculate on the Stock Exchange in 1895, and within three or four months lost £700 on African mines. The Official Receiver: About the most risky securities you could find, were they not? The bankrupt replied that however that might be Africans were then the rage. He was admittedly insolvent in 1895, and possibly went on the Stock Exchange with a view to retrieving his position. It was not until after the speculations, however, that he felt the pinch (laughter), and no doubt it was caused by the losses and claims for differences on the shares. The great bulk of his present indebtedness had been contracted within the last two years. Witness had filed a deficiency account, but the important items therein were necessarily estimated because no cash book had been kept, and he had to fall back on the bank book. Cheques drawn to "self" represented both drawings and business expenses. Witness had made no betting losses; he had had a few transactions of that nature, but had not frequently attended race meetings. The Official Receiver: There were frequent absences from business, what were they? Bankrupt: I used to run away sometimes for a few days for my own amusement. Examination continued: He might have attended two or three race meetings within the year. His absences might have had something to do with the present failure, as the business would naturally suffer by his absence. Messrs. Olive and Co. had brought an action to recover payment for goods supplied. A defence was entered on the ground that an inferior quality of goods was supplied. The bankrupt was examined at some length regarding a payment of £83 made last September to Messrs. Marsden and Sons, and another payment to the London Paper Mills. He said a private meeting of the creditors was held in August when an arrangement for a composition of 2s. 6d. in the £ was accepted. He was unable to carry through that arrangement owing to lack of funds, but had made the two payments thereunder. A payment of £100 to a Mr. Elliston in July, 1897, was in respect of money borrowed in the previous December. A bill was given at the time the loan was made, and was met at witness's bank when it matured. The Official Receiver pointed out that at the private meetings, bills of exchange to the amount of £229 were included in the assets, whereas under the present proceedings no notice was taken of them. Witness said two bills for £35 and £87 respectively were discounted and the proceeds made up the £83 paid to Messrs. Marsden in September. Other bills to the amount of £130 were not complete at the date of the private meeting, although then treated as an asset. They required the acceptance of Mr. Oldfield, who was expected by witness to take stock over in return for them. Subsequently Mr. Oldfield declined to take the stock, and it had accordingly been handed over to the trustee under these bankruptcy proceedings so that the asset appeared under the item "stock" instead of "bills of exchange." The liabilities were now returned at £1,000 more than they were stated to the private meeting. The chief reason was that he omitted on the former occasion to include bills for £730 then running and held by the Cannongrove Paper Co. (petitioning creditors) in respect of goods supplied. The Official Receiver: Why were they omitted? Bankrupt: I forgot them. Q.: Was there any special reason? A.: No, they were ordinary trade bills. Further examined, the bankrupt said the Albion China Clay Co. were creditors for £350 for goods supplied last February. That was the only transaction he had had with that company, and although he sold the goods at a profit and received his customer's cheque he did not pay a single penny to the company. His wife had taken a shop at Kingston-on-Thames, being assisted in the matter by friends. Witness had not found, and did not propose to find, any portion of the money, but he would probably assist his wife in the business. At present he was acting as a paper agent on commission. Having regard to the losses by bad debts the trading during the last two years had been conducted at a loss. He had never inquired into his position, but continued to

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trade knowing himself to be insolvent, and in so doing gradually increased his liabilities and deficiency. It was true that he had been in such straits that he had induced people to accept accommodation bills on his behalf. Those bills were drawn out in odd amounts in order to make them appear to be trade bills. They were handed to the Cannongrove Co., and with the exception of one bill for £101 14s. 9d. they had been met at maturity. The Official Receiver: Tell me why you drew this bill for £101 14s. 9d.? A.: To make it look like a trade bill. Q.: Do you think that was the right thing to do? Witness expressed no opinion. In reply to Counsel for Messrs. Olive and Co. the bankrupt admitted that that firm had supplied him with paper to consign to Bombay, and that although he received the money in payment from his customers, he did not trouble to hand it over to Messrs. Olive and Co. The examination was ordered to be concluded. The following are the principal creditors, viz.:—

UNSECURED:

J. F. Power, Ltd, Aldersgate-street	£13
Carrongrove Paper Co., Stirling...	1,230
Strong and Hanbury, Upper Thames-street, E.C. ...	25
C. Marsden and Sons, Sheffield	391
Olive Bros., Ltd., Bury	119
London Paper Mills, Queen Victoria-street	56
Albion China Clay Co., Charlestown	350
D. Russell, Tokenhouse-buildings, E.C.	500
E. Obst, Leipzig, Germany	496
C. Watkins, Basinghall-street, E.C.	50
Licensed Victuallers' Society, New Bridge-street, E.C.	21

FULLY SECURED:

H. T. Baker, Kingston	490
General Steam Navigation Co.	18

PREFERENTIAL:

Rent	25

PETER SPENCE & SONS,

Manchester Alum Works, Manchester, and Goole Alum Works, Goole.

MANUFACTURERS OF

Pure CRYSTAL ALUM

High-Class Sulphate of Alumina,

ALSO OF THE WELL-KNOWN **ALUMINOFERRIC.**

JAMES KENYON and SON,

DERBY STREET MILLS,
BURY, LANCASHIRE.

ALL FELTS for Papermakers.

Telegrams: "KENYON, BURY."

Reg. Trade Mark.

Use **STERNOLINE BRICKS** ON YOUR Calenders, &c.

SOLID STERNOLINE ON YOUR Bearings, Crankpins, &c.

SOLE MAKERS:

STERN BROS., 57, Gracechurch St., London, E.C.

BEWARE OF SPURIOUS IMITATIONS.

Also Makers of all other kinds of **SOLID OILS.**

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GERMANY.

THE NIEDERRHEINISCHE ZELLSTOFF AKTIEN GESELLSCHAFT in Walsum are erecting new sulphite works at Walsum. It is expected to commence work with 200 workpeople in the spring. The total number of workers employed by the company will then reach 500.

FERDER KOPF AND CO., Hamburg, have bought from Kraemer's pulp board works in Wandsbeckthal their machinery.

AKTIEN-GESELLSCHAFT FÜR PAPIER FABRIKATION, Aschaffenburg, has issued M. 1,500,000 in order to increase their works by putting up a second paper machine for machine-glazed tissue papers. This second machine will be ready for work in April.

CREFELDER PAPIER WERKE in Germany according to the *Papier Zeitung* have now the whole year's orders to be satisfied with and years business and the look will continue to the coming year. There is an increasing demand and the production has been increased nicely. The greater demand comes from the invention of new paper machines, principally for news many of which run at high speed. This increased production of news rise down the price and compels makers of news to give up making cheaper papers and to undertake more expensive ones for which more cellulose pulp is not be used. Through the introduction of machine-made cheaper pulp is of the increase it could not affect the price of chemical pulp because the difference in the quality is so great. For that reason forward contracts have been made at satisfactory prices. Whether such a state of things will exist for any length of time is impossible to say. Enterprising people are putting up new factories and about half-a-dozen are already in course of erection. There is also increased production in Austria and for those reasons forward contracts for pulp makers have advanced the opinion that it is advisable further to increase production.

UNITED STATES.

BRAKE BAR.—An American patent has just been granted for an invention which relates to a Fourdrinier paper machine, and it is stated that a novel construction and arrangement of the supports for the shake frame whereby a better action of said shake frame is obtained for the proper laying of the fibre along the wire. In carrying out the invention the shake frame, in which the breast roll is mounted, is supported at its movable end upon movable supporting members pivoted in position and having swinging upper and lower surfaces, thus practically constituting rollers or rolling supports along which the shake frame moves, so that in the lateral movement thereof there is no vertical movement whatever, the desired result thus being accomplished and the construction of the same thus simplified, the pivoted joints, moreover, being dispensed with so that wear is practically reduced to a minimum.

THE EXPORTS OF PAPER AT NEW YORK, according to the last weekly list to hand, included the following:—To Bristol, 376 packages; Liverpool, 48 packages; London, 2 packages; Manchester, 191 packages; Hull, 16 packages; Leith, 47 packages; Southampton, 7 packages; and Glasgow, 4 packages. Shipments to Australasia amounted to 35 packages; B. Honduras, 10 packages; B. W. Indies, 336 packages; S. Africa, 9 packages; E. Indies, 93 packages; Brazil, 5 packages; Mexico, 482 packages; Newfoundland, 5 packages; New Zealand, 2 packages; Antwerp, 5 packages; Hamburg, 4 packages; and Havre, 10 cases.

KATAHDIN SULPHITE MILL.—One of the most complete sulphite pulp plants in the States is the Katahdin Mill at Lincoln, Maine. It is not as large as many others but every foot of space is well utilised. According to a late report the output is twenty-eight tons of sulphite pulp, white, tough, soft and fine. The mill contains a battery of five boilers and a steam engine of 1,200 horse-power. The number of employees is about forty. The entire plant is run by water power two Hercules wheels, one of 250 and one of 8 horse-power, being used. The sulphur and the screenhouse adjoins the digester room. Sulphur is burned in the sulphur burning room and passes through a large lead pipe. It is drawn through the absorbing tanks by the aid of the vacuum pumps located in the acid room. About 5,000 gallons of acid is made per day at this mill. The Katahdin pulp mill has quite a perfect system of riffling that does away with sliver, sawdust and such like taken out of the cooked pulp, but not a trace of any substance, consisting of lime and salt. The riffling system of this mill covers 240 square feet of surface, and the riffles are two feet deep. This plant has a water mill of its own equipped with a log sluice for hauling logs to the mill. It owns 1,000 acres of timber lands on the line of the railway and twenty miles from the mill. It also has large tracts of timber and lumber localities.

MEXICO.

THE WESTINGHOUSE ELECTRIC CO. will furnish motors to run the largest paper mill in Mexico. Orders were received by this company recently from the Compania de las Fabricas de Papel de San Rafael y Anexas, S. A., for the erection of a complete electric power plant of 1,500 horse-power.

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The World's Paper Trade Review
A Weekly Journal for Paper Makers & Engineers.

Established 1879.

Printed and Published EVERY FRIDAY

By W. JOHN STONHILL.

at 58, Shoe Lane, London, E.C.,

Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, JANUARY 28, 1898.

The Engineering Dispute.

After a long and stubborn fight the end is near. For many months the engineering trade of this country has been demoralised, the paper trade section being seriously hampered with the rest. Papermakers' engineers have plenty of orders on hand, and upon a settlement being agreed to great activity no doubt will soon prevail. The attitude of the men this week shows that a large majority of the members of the allied trades is in favour of accepting the masters' terms, and returning to work next Monday. Various schemes are now suggested for insuring more amicable relations between employers and employed.

* * *

British Capital and American Mills.

A little while ago it was reported that a Mr. Spicer was engaged in inspecting American paper mills, with the idea of an English syndicate purchasing them, and now the name of Somerville is mentioned in connection with a similar business. The following particulars have been supplied by a Boston correspondent:—"Paper manufacturing circles were somewhat disturbed recently by the report that Mr. Somerville, of Liverpool, England, one of the leading papermakers of that city, was in town (Boston) to inspect the paper plants here with a view of purchasing. It is reported that Mr. Somerville has his eye on the Traders' Paper Mill, recently built, and one of the finest plants in the State. It was said that the visitor was willing to make them an offer which was very flattering, but that the owners, believing that they have a good thing, are manifesting an inclination to hang on." Reports such as the above are frequently published in the States, and invariably turn out to be without foundation. If the statements made from time to time had proved true, all the American mills by now would have been in the hands of English syndicates. In the matter of certain pulp mills on the Penobscot river, referred to in our last issue, there is no doubt that enquiries have been made by an English firm of papermakers.

* * *

The Exportation of Canadian Paper to Great Britain.

The suggestions of Lord Strathcona, the Canadian High Commissioner in London, regarding the prospects of selling Canadian paper in England are being followed up. A correspondent, writing from Toronto, Ont., mentions that Mr. George Mawson, a London paper agent, has been visiting Ottawa bearing letters of introduction from Lord Strathcona to Sir Richard Cartwright and other members of the Dominion government. His object is to work up an export trade in paper between Canada and England. He pointed out that Canada is a large seller of pulp wood and pulp to the United States, from which country England buys a considerable quantity of paper, the product of Canadian material. He thinks that there is no reason, therefore, why Canada should not do a large paper trade with Britain. There would, he remarked, be a large saving in freight as between pulp, which Canada is already sending to Britain, and the manufactured paper it might be shipping. But the Deputy Minister of Trade and Commerce, Mr. Parmalee, is dubious about the prospects of a paper export trade, with "news" in England selling at about a penny a pound.

* * *

Growth of Sulphite Wood Pulp Mills in Canada.

St. John, N.B., has been favoured by the offer of another pulp mill. It has now three on its hands. That of Messrs. Andre Cushing and Co. has been arranged for, the company's terms having been agreed to by the City Council. The latest proposal is made by Mr. Julius Spiro, representing capitalists of New York. He proposes to build a sulphite fibre mill which is to have at the outset a capacity of 50 tons a day, a capacity

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that will eventually be increased to 150 tons if the enterprise proves as good as it is expected to turn out. Like the Cushing Co. and the promoters of the second company, Mr. Spiro proposes to build his in Carleton suburb, and would prefer a site on Navy Island if one can be got there. One condition he asks from the city, and that is water on the same terms as it is to be furnished to the Cushing Co., that is for the small sum of 750 dols. a year.

* * *

The American Paper and Pulp Association.

This association during the past year has made strenuous efforts to increase it membership, and to advance its usefulness in placing the paper and pulp industries of the United States on a sound basis. The annual meeting of the organisation is announced to be held in New York on the 16th and 17th February, and as the association was formed in 1878, the twentieth anniversary will be celebrated. One of the objects of the Association is to promote an export trade, and we understand several papers will be read bearing on the matter.

UNION PAPER MILL, LEEDS.—Messrs. Edward Rushton, Son and Kenyon, have received instructions from Mr. Rawson to sell by auction, early next month, the paper-making plant, machinery, and effects on the premises of the Union Mill. Full particulars will be published in our next issue. Catalogues will shortly be ready, and may be obtained of the auctioneers, 13, Norfolk-street, Manchester, or from Mr. J. J. Mosley, 6, Wormaid-row, Albion-street, Leeds.

MESSRS. ROBERT LYON AND CO., marine salvage brokers, 27, Cornhill, London, will sell by public auction on Friday next, February 4th, at Mincing-lane, on account of the underwriters, about 150 tons printing paper damaged by water re the "Westgate," recently on fire in the South West India Dock.

RE THE INTERNATIONAL FIBRE CHAMOIS CO., LTD., 8, Whitfield-street, London, E.C., in liquidation.—A first meeting of creditors in this case will be held on February 15th, at 11 a.m., and of contributories on the same day, at noon. Both will take place at 33, Carey-street, Lincoln's-inn, London, W.C.

RE J. E. LEATHLEY, 28, Adolphus-street, Bradford, Yorks, rag merchant, etc., trading as J. E. Leathley and Co.—A receiving order in bankruptcy was made against this debtor on the 18th inst. on his own petition, and he was adjudicated bankrupt on the same day.

WEST LONDON PAPER MILL CO., LTD.—Resolutions have been passed and duly confirmed for the voluntary winding up of this company and the appointment of Mr. A. B. Russell, of 11, Ludgate-hill, E.C., as liquidator.

Stocks and Shares.

Compared with last week, business has been very slack in Paper shares, the only change of any note being a $\frac{3}{16}$ rise in Kellner-Partington's (part paid). North of Ireland are better by $\frac{1}{8}$, although the dividend is announced as the same as last half-year, viz., 12½ per cent.

Among Chemical shares, Brunner-Mond's ord. have lost ¼ of their recent rise. Castner-Kellner's are also easier 6d., and United Alkali ord. have fallen $\frac{1}{16}$. The debenture stock, however, has improved 1½ on the week.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
5	5	Hyde Paper Works Co. (Ld.)	nil	1⅛—2
10	10	Bath Paper Mill Co. ,,	5	11⅛—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	103—105
0	10	do. do. 6% pref.	6	12—13
3⅛	5	Burnley Paper Co. (Ld.)	10	5⅞—6¼
7	7	Bury Paper, ord. ,,	6	6⅛—6⅝
7	7	do. 6% pref. ,,	6	7⅛—7½
2½	3	Collin (Darwen) Paper ,,	nil	1⅛—1⅜
3⅛	5	Darwen Paper Co. ,,	15	7⅞—8½
10	10	E. Lancashire Paper Co. ,,	nil	5⅜—5⅝
10	10	do. do. 6% pref.	nil	6—6¼
5	5	do. do. bonus	nil	2½—2⅝
4	5	Hartlepool Pulp & Paper,,	10	7⅛—7⅜
2½	5	Kellin'r-Part'gt'n P'p Co,,	15	7⅛—8
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7⅜—7⅝
7	10	Olive Brothers ,,	10	7½—7⅞
5	5	Peebles (A. M.) & Son ,,	8	7½—7⅞
5	5	do. 5% cum. pref.	5	6⅛—6½
100	Stock	do. 4½% deb. issued 105	4½	111½—112½
3	5	Ramsbottom Paper Co. ,,	10	7—7½ c.d.
1	1	do. do. cum. pref.	5	1⅛—1⅜ c.d.
4½	5	Roach Bridge Paper Co. ,,	7½	5—5⅛ c.d.
5	5	Star Paper Co.	10	7¼—7⅝
3	5	do. do. cum. pref.	10	6—6½
100	100	Thomas Owen and Co. deb. (repayable on notice at 110)	5	114—115
1	1	do. do. 6% pref.	6	27/—27/6
1	1	do. do. ord.	12½	2—2½
10	10	Waterlow & Sons non.-cum. def.	12	15½—15⅝
10	10	do. do. non.-cum. pref.	12	15¼—15⅜
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	8¼—8⅜
10	10	do. do. cum. pref.	7	11¼—11⅜
100	100	do. do. debs. (red. 1904)	6	107—109
10	10	Brunner, Mond & Co. (Ld.)	20	40½—41
3½	10	do. do. "New" ,,	20	16⅜—16⅝
10	10	do. do. 7% pref. ,,	7	18—18¼
5	10	do. do. do. new issue	7	8¼—8⅜
1	1	Castner-Kellner Co. ,,	—	27/—27/6
5	5	Clayton Aniline cum. pref.	6	5⅛—6¼
10	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11½
100	Stock	do. do. deb. stock (red. 1912)	4	105 106
10	10	United Alkali Co. ,,	2	2⅛—2¼
10	10	do. do. cum. pref. ,,	7	9⅛—9⅜
100	Stock	do. mort. deb. (red. after 1901)	5	111½—112½

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IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

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PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries.

OFFICES—58, SHOE LANE, LONDON, E.C.

Situations Vacant.

TRAVELLER wanted to Represent in London large mill making paper bags and wrapping papers. Must be a thoroughly experienced man.—Address, No. 7,192, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7192

Situations Wanted.

ADVERTISER (28), with about 10 years' experience in makers' and agents' London offices, seeks agency, or London engagement where industry, conscientiousness, and business aptitude, would meet with a reasonable reward.—Address, No. 7,181, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7181

BEATERMAN in Mill making Browns, small hands, middies, etc.; age 32; 6 years last situation; good reference.—"F.," Ashton-villas, Wycombe-road, Gt. Marlow. 7190

WANTED, by Mechanic, situation in Paper Mill; 15 years' in paper mill work as a general hand.—Address, No. 7,189, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe Lane, London, E.C. 7189

WANTED.—Situation as Manager or Foreman; used to writings, printings, news, etc.; 14 years in last mill; good references.—Address, No. 7,123, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe Lane, London, E.C. 7187

Machinery.

FOR SALE, 4 cast-iron calender rolls, 80-in. wide, 14-in. diameter, with blocks and frames.—Address, No. 7,118, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7118

Miscellaneous.

CAPITAL at 5 per cent. per annum can be obtained by established firms.—"Bank," care of Emmison's Advertising Offices, Manchester. 6943

FOR SALE.—Copies of the *World's Paper Trade Review*, from July 1st, 1894, to June 30th, 1895; handsomely bound in 2 vols., half-calf, with cloth sides and gilt lettered on back; condition as new; 10s. the two; a bargain. Also copies of vol. 2 of the *British and Colonial Printer and Stationer*, July to December, 1879, bound; 2s. 6d. each to clear, binding costs more. Contains the first six Nos. of the *Paper Trade Review*.—Address, No. 10865, office of the BRITISH AND COLONIAL PRINTER AND STATIONER, 58, Shoe-lane, London, E.C. 10865

IT IS WORTH YOUR WHILE TO BUY DIRECT.—The RELIANCE LUBRICATING OIL COMPANY supply on approval "Reliance" high-class NON-CORROSIVE LUBRICANTS, which, through their superiority, have the largest sale in the world. Engine, Cylinder and Machinery Oils, 11½d.; Spindle Oil, 9½d.; Loom Oil, 10½d.; Extra Special Cylinder Oil, 1s. 4d.; Extra Special Engine Oil, 1s. 4d.; Gas Engine and Dynamo Oils, 1s. 6d. per gallon; Light Machine Oil, 10d. Barrels free and carriage paid. Brick Oil, 4d. per gallon. Also Solid and Liquid Oils for all other purposes.—RELIANCE LUBRICATING OIL COMPANY, 19 and 20, Water-lane, Tower-street, London, E.C. Depots at Liverpool, Bristol, Hull, Cardiff, and Glasgow. Telegrams, "Subastral, London." A B C code used. Telephone No. "Avenue," 5,891. 3068

REEL ENDS.—One thousand wooden ends for sale. Will accept low price to clear.—John Dickinson and Co., Ltd., Home Park Mills, Kings Langley, Herts. 7194

TO BE LET or SOLD cheap, Freehold Paper Mill in the West of England, alongside deep water quay, with cheap carriage by steamer or rail; water power and steam. To be disposed of on account of owner's health.—Address, No. 7,180, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7180

NOW READY.

A Stämpelbok,

Or Book of the Trade Marks of the Chemical and Mechanical Wood Pulp Mills in Sweden and Norway.

Each Country in a separate volume, 8vo. cloth.

Compiled by Mr. K. VON HOFSTEN, Gothenburg, Secretary to the Association of Scandinavian Pulp Makers (Swedish Section).

☛ Copies can be had at the Office of the WORLD'S PAPER TRADE REVIEW, price 7/6 each post free.

These Books not only contain the Shipping Marks of each Mill, but give also full particulars about their Names, Owners, and Production; they should therefore prove Most Useful Guides to anyone connected with the Pulp Industry in Scandinavia.

Can also be had in One Volume, uniform with above, and in the ENGLISH LANGUAGE for 15/- net and post free.

Special Supplementary Lists of the New Mills started to the end of 1897 are now included.

Sole Agent or the U.K.:

W. JOHN STONHILL, 58, SHOE LANE, LONDON.

☛ NOTICE TO THE TRADE IN SCANDINAVIA.

SUBSCRIPTIONS for "The World's Paper Trade Review" are accepted at any Post Office in Norway and Sweden and intending New Subscribers for 1898 can arrange to transmit their orders through that medium, if so desired.

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TO PAPERMAKERS and OTHERS.

600 Reels & 64 Bales Wet Printing Paper,
(About 150 Tons in all), and
148 BALES STRAWBOARDS,
Ex "Westgate," by order of the London Salvage Association.

ROBERT LYON & Co.

Will SELL the above by PUBLIC AUCTION,
On FRIDAY next, FEBRUARY 6th, at Noon,
At the COMMERCIAL SALE ROOMS, Mincing Lane, London.

On view on and after Tuesday, at No. 2 Quay, South West India Dock. Catalogues January, 29th, of Robert Lyon and Co., Marine Salvage Brokers, 27 Cornhill, London. Telegrams, "Flotsam," London.

UNION PAPER MILL,

DEWSBURY ROAD, LEEDS.

Preliminary Announcement of Important Piecemeal Sale of High-class Modern Papermaking Plant and Machinery, Steam Boilers, Fuel Economisers, Steam Engines, and the Entire Contents of the above Works.

Edward Rushton, Son and Kenyon

are honoured with instructions from Mr. Rawson to catalogue and

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EARLY IN FEBRUARY, 1898,
The Whole of the Valuable
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UNDERWOOD, E. & SON, Ltd., Brentford, London, W. Press-packed Oat, Wheat, or Rye Straw, delivered to the chief British ports or railway stations.

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ALSING & Co., Ltd., 110, Cannon Street, London, E.C. Agents for the well known "K.K." Soda Pulp; also Sulphite and Mechanical.

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MARKET REPORT

competition is likely to grow in the future as the principal mills across the Atlantic cultivating an export trade have decided to put in plant to enable them to export the material in the dry state. British mills—or at least the large consumers—are showing an anxiety to get a controlling interest in American mills. Quotations are without any material fluctuation, averaging about 42s. 6d. east coast.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	... .	£6 10 0
Pine, Dry	... ...	£4 5 0 to 4 15 0
,, Moist	... ...	2 2 6 ,, 2 10 0
Brown, Dry	... ...	4 15 0
,, Moist	... ...	2 10 0

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt

Pine Pulp, 50% moisture, ordinary	...	Frs. 12.50 to 13.
,, ,, fine	...	13. ,, 13.50
,, dry, ordinary	... ...	11.50 ,, 12.
,, ,, fine	... ...	12.50 ,, 13.
Aspen, ,, ,,	... ...	16. ,, 18.
Half-Chemical Brown, 50% moisture		12.50 ,, 13.
,, ,, dry	...	12 50 ,, 13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
1303 bales	Halifax		London
40 ,,	Drammen	Becker & Co	,,
830 ,,	,,	M. G. Skramnes	,,
1970 rolls	Philadelphia	Henderson, Craig	,,
2701 bales	St. John's	Thin and Sinclair	,,
5900 ,,	Drammen	E. Lloyd Ltd	,,
605 ,,	Boston		,,
1756 ,,	Antwerp		,,
400 ,,	Gothenburg	W. G. Taylor	,,
329 ,,	,,		,,
32 ,,	,,	Green and Co	,,
21 rolls	,,		,,
130 bales	,,	Spicer and Son	,,
48 ,,	,,	R. L. Lundgren	,,
170 ,,	,,	Ronaldson and Co	,,
23 ,,	,,		,,
4800 ,,	Kragero	Becker and Co	,,
254 ,,	Hambro	,,	,,
1300 ,,	St. John's		Liverpool
503 ,,	Oporto		,,
250 ,,	Antwerp		,,
4874 ,,	St. John's		,,
2027 rolls	,,		,,
860 bales	Christiania		Hull
880 ,,	Drontheim		,,
316 ,,	Hango		,,
3508 ,,	Drontheim		,,
1131 ,,	Gothenburg		Manchester
1790 ,,	Christiania		,,
1325 ,,	Drammen		,,
5457 ,,	Gothenburg		,,
204 ,,	New York		,,
4159 ,,	Gothenburg		,,
2750 ,,	Fredrikshald		,,
61 rolls	New York		Glasgow
3415 bales	Skein		Preston
7628 ,,	Christiania		,,
224 ,,	Gothenburg		Granton
100 ,,	Hamburg		Grangemouth
2059 ,,	Christiania		,,
1 ,,	Rotterdam		,,
51 ,,	Hambro		Leith
202 ,,	,,		,,
40 ,,	Copenhagen		,,
52 ,,	Rotterdam		,,

Totals of Wood Pulp from Each Country:

BELGIUM	2006 bales	NORWAY	28375 bales
CANADA	9578 ,,	PORTUGAL	500 ,,
,,	2027 rolls	SWEDEN	19663 ,,
DENMARK	40 bales	,,	21 rolls
FINLAND	316 ,,	U.S.A.	809 bales
GERMANY	607 ,,	,,	2032 rolls
HOLLAND	53 ,,		

FOREIGN RAGS.—The demand for continental rags is fairly good, and prices are considered satisfactory. The week's arrivals at British ports were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
10	Hambro	Hull	35	Amsterdam	Goole
219	Rouen	,,	153	Antwerp	,,
64	Ghent	,,	53	Boulogne	,,
26	Amsterdam	,,	43	Hambro	Grimsby
29	Rotterdam	,,	170	Dieppe	,,
215	Copenhagen	,,	16	Rotterdam	,,
48	Hambro	,,	59	Antwerp	,,
87	St. Nazaire	,,	373	Dieppe	,,
65	Amsterdam	,,	237	Ghent	Leith
76	Ghent	London	10	Dunkirk	,,
14	Bordeaux	,,	38	Konigsberg	,,
56	Treport	,,	44	Amsterdam	,,
17	Rotterdam	,,	12	Hambro	,,
9	Amsterdam	,,	15	Jersey	Southampton
90	Ghent	,,	24	Cherbourg	,,
27	Melbourne	,,	24	Jersey	,,
26	Gothenburg	,,	5	Amsterdam	Grgmth
132	Boulogne	Goole	33	Alexandria	Liverp
32	Delfzyl	,,	53	Constantinople	,,
67	Antwerp	,,	130	Smprna	,,
13	Amsterdam	,,	66	Bordeaux	,,
75	Hambro	,,	48	Antwerp	,,
45	Boulogne	,,	9	Barcelona	,,
188	Ghent	,,	11	New York	,,
3	Calais	,,	23	St. Nazaire	Newhvn

Totals from Each Country:

AUSTRIA	27 bales	HOLLAND	291 bales
BELGIUM	982 ,,	PRUSSIA	38 ,,
CHANNEL Isles	39 ,,	SWEDEN	26 ,,
DENMARK	245 ,,	SPAIN	9 ,,
EGYPT	33 ,,	TURKEY	563 ,,
FRANCE	1275 ,,	U.S.A.	11 ,,
GERMANY	188 ,,		

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/o	Mxd Hemp Rope—	
,, No. 2	9/9	Broken (in bags)	6/o
,, No. 3	6/3	W. Manilla Rope (coils)	7/3
Grey Linens	9/o	do. Tarred	4/9
Clean House Cloth	3/o	Canvas No. 1	14/3
Mixed Fustians	3/o	,, No. 2	9/9
Coloured Prints	2/7½	,, No. 3	6/3
Dark Prints	2/1½	W. Untarred Rope	9/o
Blue Cottons	5/o	Paper Shavings—	
Light Lilac Cottons	7/o	Free from wood	7/3
Mxd Hemp Rope (coils)	8/o	Not free from wood	5/

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/o	FF Grey Linens	8/o
SPFFF	18/o	LFX Second ditto	7/o
SPFFF and SPFF	17/o	CSPFFF	14/o
SPFF	14/o	CSPFF	12/o
SPF	11/o	CFB	6/o
CCC	5/o	Dark Blues selected	11/o
CFX	4/o	Wool Tares	8/o
White Rope	6/o	Jute, No 1 6/o; No. II	5/o

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/o	LFB (Blue)	8/o
SPF	11/o	CSPFFF	14/o
FF	8/o	CSPFF	10/o
FG	8/6	CFB (Blue)	6/o
FFX	7/o	CFX (Coloured)	4/o

FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchette Bristol, Leith, 10/- extra.

French Linens, I	21/o	Black Cotton	2/o
II 15/6; III	9/6	Blue Linens	7/o
White Cottons, I	15/6	New Light Prints	16/o
II 12/o; III	8/9	New White Cuttings	20/6
Coloured Cotton	3/6	,, Stay	15/o

PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/o	CC (Cotton)	4/o
SPF	12/6	Jute I	3/o
FG	10/o	,, II	2/o
LFB	8/o	Rope I	8/6
FF	5/6	,, II	6/o

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BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linen	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cuttings	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	2nd Canvas ...	7/0
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/0

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* ... at Smyrna and Salonica.

HOME RAGS.—LONDON: The market is still quiet.—BRISTOL: There is a steady enquiry.—MANCHESTER: The outlook is fairly good.—EDINBURGH and GLASGOW: There is a fairly good demand; prices practically unaltered.—DUBLIN: Business is only on a moderate scale.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/0
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3.	5/0
Outshots (selected) ...	12/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/0	Gunny	2/0-2/3

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	29/-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/6
Outshots	12/0	W. Manilla Rope ...	7/0
Mixed Fines...	14/0	Tarred Manilla Rope	5/9
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Canvas (best)	15/0	Bagging...	2/3
2nd	8/	,, (clean)...	3/0-4/0

GLASGOW.

Fines	12/6-16/0	Canva No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues... ...	3/3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	9/0

DUBLIN.

White Cuttings ...	16/0	Mill Bagging	/0
Fines	9/0	White Manilla...	6/9
Seconds	3/6	Tarred Hemp	6/0
Light Prints	2/6	Rigging	10/0
Black do.	1/6	Mixed Ropes ...	

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

WASTE PAPERS.—Steady demand; prices firm.

Cream Shavings ...	10/0	Small Letters ...	3/0
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/3
White Printings ...	7/0	Light Browns	3/0
White Waste ...	1/9	Dark ,, ...	2/0
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/6
Blue Paper	2/0	Strawboard Cuttings	1/3
Crushed News	2/0	Jacquards	7/0

For Export: 2s/- per ton extra.

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common ...	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections ..	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings ...	£3 0 to £4 0

STRAW.—Prices:

Oat Straw, ...	c.i.f. London	42/0;	t.o.r. Goole, 42/0
Wheat ,, ...	do.	44/0;	do. 40/0
Rye ,, ...	do.	57/6;	do 57/0

STRAW PULPS. — Prices are well maintained.

Prices, c.i.f. London, Hull or Leith

German, drv. No. 1	£14 0 0
,, No. 2	£13 0 0

STARCH.—The market for starch is somewhat disturbed, owing to a reported difference in the quotations for some qualities. Rice is steady and Farina strong. Reports, however, are very conflicting in regard to Maize. The general market price for powder is about £7, but we hear that quotations are on the market at considerably below this figure. Considering the present price of Maize, it seems almost impossible to manufacture at the low rates mentioned, viz., £4 and under, c.i.f. Liverpool. Therefore, as the quotation lacks confirmation, we are inclined to dispute its accuracy.

F.o.r. London, less 2½%

Maize—Crisp, £10 0/-; Pearl, £6 10/-; Powder, £7 0/-
Special £14.
Farina—Prime, £10; B.K.M.F., £13 10/-.
Delivered, less 2½%:
Rice—Special (in chests), £20 0/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.
Dextrine—£15

SIZING.—Market buoyant.

English Gelatines per cwt.	90/0	to	120/0
Foreign ,, ...	70/0	,,	100/0
Fine Scotch Glues	45/0	,,	60/0
Long Scotch Glues	35/0	,,	40/0
Common Black ,, ...	25/0	,,	28/0
"Town" Glues	38/0	,,	45/0
"Bone" Glues	26/0	,,	30/0
Foreign Glues	28/0	,,	35/0
Bone Size	5/6	,,	10/0
Gelatine Size	6/6	,,	10/0
Dry B.A. Pieces	50/0	,,	55/0
,, English Pieces	35/0	,,	45/0
Wet ,, ,, ...	8/6	,,	9/0
,, Sheep Pieces	3/0	,,	4/0
Buffalo Hide Shavings	32/0	,,	40/0
,, Picker Waste	32/0	,,	35/0

ROSIN.—Market quiet. Stocks low. Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WO	WW
4/9	5/-	5/3	5/4½	5/6	6/-	6/3	6/9	7/-	8/-	9/-

COLOURS.—Prices:

Mineral Black ...	cwt.	3/6	PASTE COLOURS with
do. superior ...	,,	4/0	60% of colour, as follows
Pure Ivory Black	,,	12/0	Orange Pulp ... cwt. 40/0
Ochre	,,	2/3	Golden Yellow Pulp 30/0
French J. C. Ochre	ton	60/0	Lemon ,, ,, cwt. 30/0
Chrome (pure) ...	cwt.	40/0	Prussian Yellow ,, 36/0
Red Oxide	,,	4/6	Green (free of arsenic 26/0
Umber, Devonshire	,,	50/0	Paste Blue, 20% ... 18/0
do. Turkish ...	,,	40/0	,, 33%; 26/0; 45% 45/0
Lamp Black ...	,,	5/0-7/6	Imperial Yellow (dry) 16/0
Ultramarine (pure)		35/0-45/0	(less 2½% d/d)
Cochineal	lb.	4/2-2/0	

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METALS.—LONDON: COPPER easy and prices weak; TIN steady; LEAD dull. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	48	17	6	49	2	6
,, three months	49	5	0	49	10	0
Tough	51	5	0	51	10	0
Best selected	52	5	0	53	0	0
Strong Sheets	59	0	0			
TIN—						
Fine foreign, cash	63	1	3	63	11	3
,, three months	63	13	9	£4	3	9
LEAD—						
Spanish...	12	8	9	12	10	0
English...	12	11	3	12	13	9

MINERALS.—The demand for CHINA CLAY is not very active, and common qualities in particular are neglected. There is a steady demand for FRENCH CHALK and MINERAL WHITE, and a moderate business is being done in SNOWDRIFT. BARYTES are in fair request, and there is some enquiry for SATINITE.

Mineral White (also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine... ...	28/0 less 2½ % ; del. Lancashire...		38/0
Pottery Super.	24/0	,, ,, ...	34/0
Ball Seconds ...	20/0	,, ,, ...	30/
Seconds	15/0	,, ,, ...	25/0
Thirds	11/0	,, ,, ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/5 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in cask 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 47/- to 52/6.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 66/0, 73/6, 77/6 and 92/6 per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool, I.W.A., "Portland Mills," and "Swan" marks, £4 15/- to £6 0/- per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-.

Patent Hardening (2 ton lots) f.o.r. Lancs., £3 5/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £6 0/0; calcined, £11.

Magnesite (in lump) 39/6 to 46/0 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, 35/- to 68/- per ton, according to quality.

Bauxite, minimum alumina 60%, 15/9 f.o.b.

Pyrites (non-cupreous), f.o.b shipping port 4⅛d. per unit.

Satinite, £3 to £3 6s. 0d., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/6 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0 to £13 15/- del.

LIME.—The present price is 10/6 per ton f.o.r

BALING TWINE.—Prices:

	Thick.	Medium.	Fine
Hemp ...	4d. per lb.	4½d. per lb	5d. per
Mixed ...	3½d. ..	4d. ,,	4½d. ,

THE WORLD'S PAPER TRADE REVIEW.

☞ The completeness of its Market Reports have made it INDISPENSABLE to the Paper and Paper Stock Trade, and its DEPENDABILITY is recognised throughout Europe and America.—*The Printers' Register*, London.

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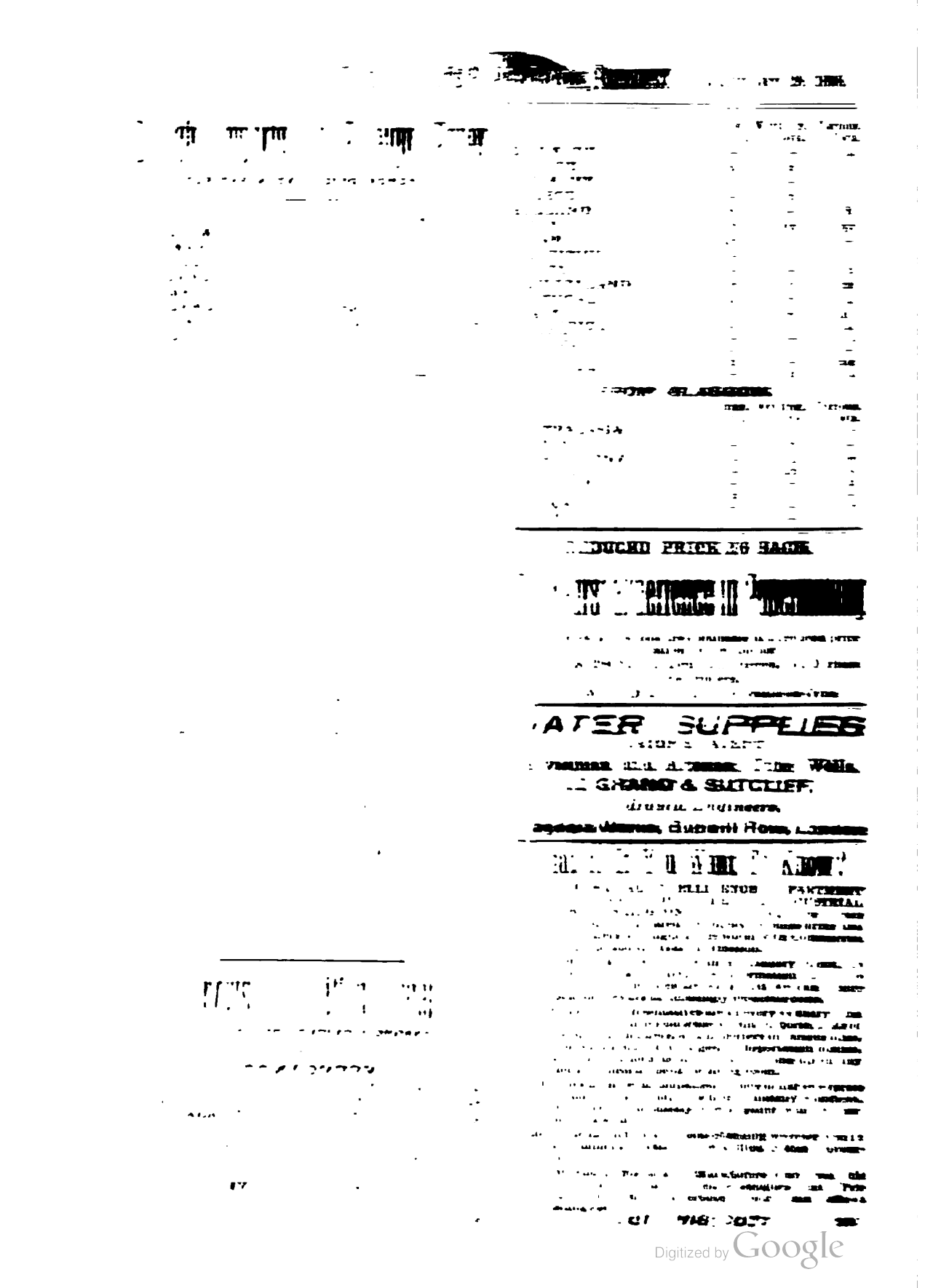

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SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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General Notes.

THE *Morning*, we are informed, is to be sold to a syndicate, of which Mr. Joseph Cooke, of the *Sheffield Independent*, and Mr. J. E. Macmanus, late acting editor of the London *Daily Mail*, are directors. Mr. F. J. Hillier, who succeeded Mr. J. F. Nisbet in the editorship a year ago, has declined a re-engagement, and the new editor will be Mr. Macmanus. The paper is to remain independent in politics, and its size will be increased and some new features of public interest will be added.

FALSE TRADE DESCRIPTIONS IN INDIA.—The Board of Trade have received from the India Office copies of reports from the Governments of Bengal, Burma, Bombay, and Madras with regard to the proceedings taken by the customs officials under the Indian Merchandise Marks Act of 1889. Among the instances recorded at Madras are the following: The labels on the ream packets of two consignments of Belgian note-paper bore English descriptions without the required indication of the country of origin, which was ordered to be stamped on the imposition of a penalty of Rs. 5 in each case. A consignment of Italian foolscap paper was imported with the sheets bearing a representation of Britannia on one side, and the words "extra strong" on the other without the country of origin. The sheets in a consignment of Belgian note-paper were water lined on the left hand top corner with the words "under quarter tola" without any indication of the country of origin. Boxes of Italian cards and envelopes contained in a case were printed with English descriptive words without any indication of the country of manufacture. The words "made in Italy" were ordered to be stamped on them on payment of a small penalty.

UNITED STATES CONSULAR REPORTS.—The Board of Trade have received a communication from the U.S. Department of State to the effect that, beginning on 1st January, 1898, the miscellaneous reports of consular and diplomatic officers upon commerce and industries in foreign countries, will be printed immediately after their receipt at the Department of State in the form of "Advance Sheets," heretofore issued at intervals as occasion seemed to require. The change to what will practically be the daily publication of these reports, excepting Sundays and legal holidays, has been ordered by the Secretary of State, with the view to the promptest and widest possible distribution of the commercial information obtained by the Department of State for the benefit of the mercantile and manufacturing interests of the United States. The daily edition is intended especially for the use of the newspaper press (which will thus be enabled to obtain the reports in full with the least delay), the boards of trade, chambers of commerce, associations of exporters and manufacturers, and other organised bodies engaged in the development of foreign commerce, and of individual firms especially interested in obtaining such data without loss of time. The monthly "Consular Reports," being a reprint of the "Advance Sheets" in convenient form for preservation, will be issued as heretofore.

ONE of our subscribers, who found a spider in his paper last week, wants to know if it is to be considered a bad omen. Nothing of the kind. The spider, we expect, was merely looking over the columns of the paper to see what firms were not advertising, so it could spin its web across their door and be free from disturbance.

"SELL'S DICTIONARY OF THE WORLD'S PRESS," the well-known bulky yellow volume that forms an indispensable manual for all connected in any way with newspaperdom, is now in its fifteenth year of publication, and the current issue, just to hand, shows no falling off in the usefulness of its contents, which embrace full particulars of all papers published in the United Kingdom, as well as the chief foreign papers. There is a good deal of interesting literary matter, of much use to those engaged in newspaper work, and several articles that will be appreciated by commercial men generally, including the following:—"A List of Treaties of Commerce and Navigation between Great Britain and Foreign Powers," by Joseph Ackland. It is believed that this is the only classified enumeration and analysis of such treaties which has been published. An account is given of the Royal Declarations (which were the precursors of Treaties of Commerce and Navigation) commencing in the times of Charlemagne in 795.—"New Legislation concerning Trade and Commerce," Session of 1897.—"Canadian Tariff," 1897. "United States Tariff," 1897. Giving full details as to duty charged on every article. These treaties came into operation in April last. A full list is given of the goods subject to duty and of the articles which are on the free list, prohibited goods, etc.—"United States and Canadian Retaliatory Commercial Legislations."—"United States and the World's Carrying Trade," showing how America's position in the carrying trade to this country has declined during the last 60 years, and particulars of their plan to regain the same.—The Progress and Status of "Australian Federation."—Also a Directory of the Peerage, House of Commons, H.M. Courts of Justice, Ambassadors, Colonial Governors, Statistics of Population, Trade and Commerce, Shipping, Railways, Agriculture, Education, and Assurance. A useful map accompanies the volume, which gives the principal cable routes of the world, with the price per word for transmission of cablegrams.

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THE UNITED ASBESTOS

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Commercial Intelligence.

Re JOHN and HORACE COWLEY, Publishers.

The first meeting of creditors was held at the London Bankruptcy Court on the 14th January, before Mr. E. Leadam Hough, official receiver. The debtor, J. Stapleton Cowley-Brown, is described as of Granville House, Arundel-street, London, publisher, trading as John and Horace Cowley. The receiving order was made on the petition of the Westfield Paper Co., Westfield, Linlithgow, creditors, for £183. The debtor states that prior to August, 1895, he was in the receipt of an allowance from his father, the Rev. G. J. Cowley-Brown, of Grosvenor-place, Edinburgh. That in that month he became entitled to a legacy of £2,080 from his great uncle, and was without occupation until January, 1896, when with a stock of goods purchased in England, he started in New York as a dealer in athletic goods. Owing to ill-health he was compelled to leave the business in charge of a manager, and when he finally gave it up he sold some of his stock and came back to England. That business had resulted in a loss to him of about £1,300. In June last, with a capital of £30 he started the publication of a monthly periodical, the *Anti Philistine*. He anticipated that his brother, then in South Africa, would join him in this undertaking, but he declined to do so. Four numbers of the paper were issued, and other parts were ready for publication when the landlord distrained on the office furniture for the rent. Debtor returns his liabilities at £3[illegible] and his assets at £[illegible]. These include American book debts, £[illegible], but do not include the copyright of [illegible], which is not estimated as being of any value. He cannot state whether he has any interest under his father's will. He has lost £3[illegible] on the [illegible] and had [illegible] [illegible]

Company Registrations.

"DAILY MAIL" PUBLISHING CO., Ltd.

Registered with a capital of £200,000, in £1 shares, to adopt and carry into effect a certain agreement for the acquisition, by purchase or otherwise, of the publication known as the *Daily Mail*, to print and publish the same, and to carry on, in all or any of their respective branches, the businesses of printers and publishers of magazines, books, newspapers, etc.; as advertisement agents and contractors, die sinkers, etc. The signatories are:—A. Harmsworth, 36, Berkeley-square, W.; H. Harmsworth, 24, Tudor-street, E.C.; C. Harmsworth, 24, Tudor-street, E.C.; R. L. Harmsworth, 24, Tudor-street, E.C.; H. A. Harmsworth, 24, Tudor-street, E.C.; K. Jones, 92, Maida-vale, W.; F. Miller, 1, Telegraph-street, E.C. The first directors—of whom there shall be not less than three nor more than eight—are A. C. W. Harmsworth (chairman and life director), H. S. Harmsworth, C. B. Harmsworth, R. L. Harmsworth, H. A. Harmsworth, and K. Jones.

"LONDONER PRESS" Limited.

Registered with a capital of £5,000 in £1 shares, to enter into an agreement with H. G. Chancellor and F. L. Thorpe, for the acquisition of the *Londoner Press*, carried on at 13, Clerkenwell-road, E.C., and to carry on the business of printers, publishers, and advertisement contractors. The first directors (to number not less than two nor more than five) are: H. G. Chancellor and F. L. Thorpe managing director, the latter being managing director with £150 per annum.

FIELDHOUSE, CROSSFIELD and CO., Ltd.

Registered with a capital of £20,000 in £1 shares, to acquire the business carried on by J. Fieldhouse and J. Crossfield, at the Wharfedale Foundry, Otley, Yorks, as Fieldhouse, Crossfield and Co., and to carry on the business of engineers, ironfounders, manufacturers of printing and other machines, tool makers, etc. The first directors are J. Fieldhouse, J. Crossfield, [illegible] Fieldhouse, E. Crossfield, and W. Fieldhouse. Qualification, £500. Remuneration as fixed by the company.

"[illegible] MUSICAL MAGAZINE" Limited.

Registered with a capital of £10,000, in £1 shares, to acquire and carry into effect an agreement expressed to be made between E. Hatzfeld of the one part and the company of the other part; and generally to carry on in all or any of their respective branches the businesses of [illegible] magazine, book and music [illegible], publishers, papermakers, stationers, [illegible], etc. The first directors are [illegible], E. Hatzfeld, C. [illegible], and W. Kelsey. Qualification, [illegible]. Remuneration, £200 each per annum.

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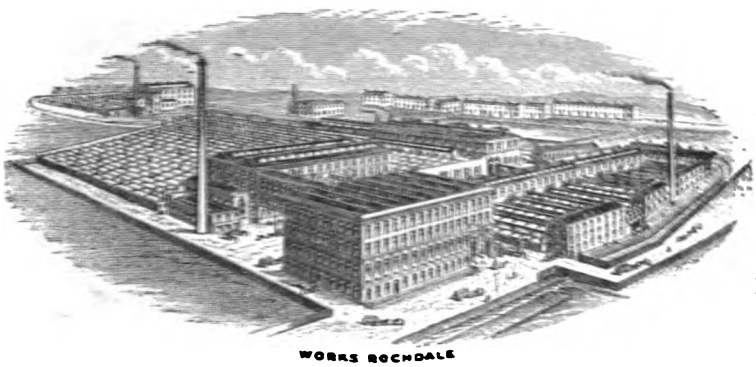

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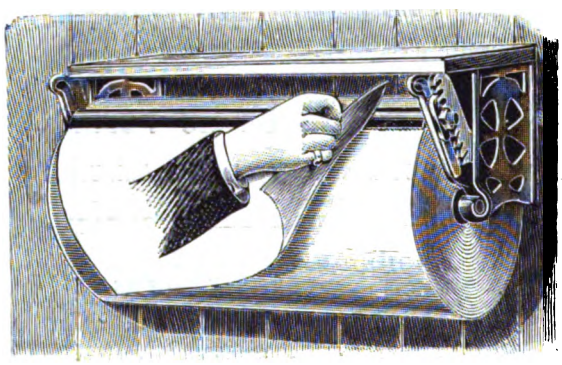
A New Roll Holder.

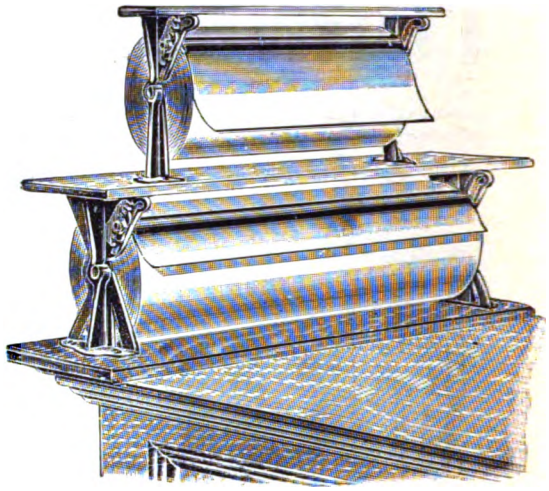
It is a well-known fact—and one that is appreciated by all who have tried the system—that the use of wrapper paper in web form for shopkeepers' parcelling has many advantages over the older method of using cut sheets, both in the matter of economy and in cleanliness in use. Many of the leading shopkeepers in our larger towns and cities appreciate this method, and use it exclusively in their establishments, and wherever the system of using roll paper has been introduced it has quite supplanted the former method. A few of the advantages derived from the use of web paper for wrapping, as compared with paper in the sheet, may be here noticed, and as any system that means a saving of money to the business man appeals most forcibly to him, we may say that there is a saving of quite twenty-five per cent. to be made through



Bracket form of "Economy" Roll Holder for End of Counter or Wall.

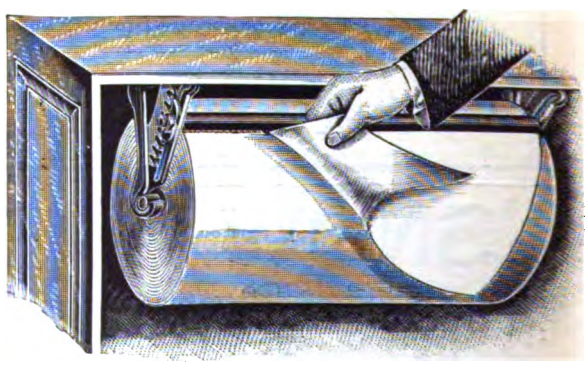
the absence of waste alone, as out of one width of roll a varied range of sizes may be had; as, for example, from a web 20 inches wide there can always be obtained in pieces 20 by 35, 20 by 30, 20 by 27, 20 by 24, 20 by 20, 20 by 13 inches, or in fact any size having a width of 20 inches one way. As to convenience; the sizes have not to be hunted for, the paper is always in place, and time and trouble in cutting up larger sheets into smaller are saved. In tidiness alone the roll system is far ahead of the sheet system, and prevents the littering of floor or counter with scraps of paper, or the untidy feature of sheets hanging on a string that is seen in so many shops. Another thing to be noted is that notwithstanding its advantages, the cost of roll paper is exactly the same [illegible] sheet paper.

thus enumerated a few of the favour of the web system of apping papers, it is necessary the appliance that is used for ul storage and cutting, which



Double Standard "Economy" Roll Holder.

is termed the "roll holder," a variety of styles of which are made by Messrs. Wm. Ashton and Sons, Grosvenor Works, Southport, a firm that has devoted much attention to introducing and developing the system among shopkeepers. Some of the forms of their roll holders we have already referred to in these pages, and at present will confine our remarks to a description of the newest form which is just ready to put on the market, and is termed the "Economy" Roll Paper Holder and Cutter, an appliance which is, in certain respects, superior to any that they have yet put on the market. From our illustrations it will be seen that in general appearance it is much like other holders, the principal difference being in the action of the cutting bar, or knife, which is constructed on a new method which ensures the paper being drawn off easily at any angle, thus enabling the Holder to be placed in almost any position on a counter or table, and not necessarily where the paper can be drawn off in a downward direction only. As



"Economy" Roll Holder to Hang under Counter or Shelf.

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the diameter of the roll of paper becomes less by use, the cutter (a blade curved to the shape of the roll) falls by its own weight the extent of a single tooth in a rack-slot at each side, within which it moves. The paper being lifted up against the knife, is torn with a clean edge at any point, and pressure of the knife against the paper is uniform at all stages of the roll's use. There is thus but little friction on the paper, a very slight pull sufficing to take off the necessary piece, and there are no springs to get out of order, while the mechanism is so simple that it cannot get out of gear in any way. Several forms of the "Economy" Holder are made so that the shopkeeper can have it placed in the most convenient position, on or under counter, or on wall or bracket; a few of these forms we illustrate. As to the prices they are most moderate, ranging from 7s. for a 9, 12, or 15 inch holder up to 13s. 6d. for a 40 or 45 inch holder, any of the forms being supplied at the same prices.

As to procuring the necessary webs of paper in varying sizes, that is an easy matter, as Messrs. Ashton and Sons hold a stock of several thousand rolls of paper, specially made for use with the roll holders. About 20 qualities in cap and brown papers are stocked in most of the following widths—9, 12, 15, 18, 20, 24, 27, 30, and 36-inch, and two sorts in 40 and 45-inch widths. These are sold at per cwt., and are priced with the view to standing comparison with the best value to be obtained in sheet paper. The weight of paper on a roll may be calculated at about ¾-lb. for thin to 1¼-lbs. per inch in width for thicker papers. Special discounts and rates as to carriage are given. There is a large field open for pushing roll holders and paper in, as although the system is so advantageous to the shopkeeper, it has not yet been generally adopted, and the pushing agent who will take up and sell the appliances and papers sold by Messrs. Ashton should make a profitable thing out of it.

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
A B	50	19¾	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba	55	21¾	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C	60	23¾	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca	65	25¾	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E	83	32¾	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea	91	35¾	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F	95	37¾	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa	100	39¾	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga	113	44¾	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H	120	47¾	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha	140	55	1,959	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z	210	82¾	—			4,900	245	0	500	25	0	200	10	0	—		—

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The Royal Tradesmen.

In the *London Gazette* for the 7th inst. are published the usual periodical lists of tradesmen who hold Warrants of Appointment, and therefore have authority to use the royal arms in connection with their business. Amongst the names are the following :—

APPOINTED BY THE LORD STEWARD.

STATIONERS.—Henry Roberts and John Bignell; Richard Oxley and Son; Willmore and Scott, Windsor.

ENGRAVER.—R. S. Warrington.

TYPEWRITING MACHINE MAKERS.—"Remington," "Standard" (Wyckoff, Seamans and Benedict.)

POST OFFICE DIRECTORY PUBLISHERS.—Kelly and Co., Ltd.

FROM THE LORD CHAMBERLAIN.

LONDON.

ART PRINTSELLERS AND PUBLISHERS.—Thomas McLean; Dickinson; Algernon Graves; P. and D. Colnaghi; Jean Boussod, Manxi, Joyant and Co.

ARTISTS' COLOURMEN.—Winsor and Newton.

BOOKBINDERS.—George Cross; R. Rivière and Son.

BOOKSELLERS AND STATIONERS.—Harrison and Sons; George Hyde; John Bumpus; Edwards and Sons; August Siegle; Alexander Jones and Co.

CARVERS AND GILDERS.—W. Brooks and Son.

CHROMO-LITHOGRAPHER.—William Griggs.

ENGRAVERS (SEAL AND GEM.)—Ortner and Houle; Longman and Co.

GEOGRAPHERS.—James J. C. Wyld; Edward Stanford.

GYMNASTIC APPARATUS MAKER.—George Spencer.

HERALDIC PRINTERS.—G. and C. Bishop

LITHOGRAPHERS.—Maclure and Co.; J. A. Vinter.

MUSIC SELLERS.—Schott and Co.; Robert Cocks and Co.; Stanley Lucas, Weber, Pitt and Hatzfeld.

NEWSAGENTS.—May and Williams.

PRINTERS, PUBLISHERS, AND PRINTSELLERS.—Richard Bentley and Son; Harrison and Sons; William S. Mitchell; Emily Faithfull; Raphael Tuck and Sons, Ltd.; P. and D. Colnaghi and Co.; Arthur Ackermann; Butterworth and Co.; Skeffington and Son.

TYPEFOUNDERS.—Sir Charles Reed and Sons.

TYPEWRITING MACHINE MAKERS.—Typewriter Co., Ltd.

PROVINCIAL.

ART DEALER.—Alfred Thompson Barber, Windsor.

BOOKSELLERS AND LIBRARIANS.—Chas. Luke, Plymouth; W. E. Franklin, Newcastle-on Tyne; Benjamin Benson, Weymouth; Abel and Sons, Northampton; Galt and Co., Manchester; Griffin and Co., Portsmouth.

CARVERS AND GILDERS.—Arthur and Frederick Halliday, Windsor; James Lindsay, Sunderland; Edwin Joyce, Ryde.

CHROMO-LITHOGRAPHER.—Alf Cooke, Leeds.

MUSIC SELLERS.—Dyson and Sons, Windsor; Henry Simms and Son, Bath.

PRINTERS, PUBLISHERS AND PRINTSELLERS.—R. and F. W. Oxley, Windsor; Haydon Hare, Scarborough; Ernest Marshall, Windsor.

STEEL PEN MANUFACTURERS.—John Mitchell, Birmingham; Joseph Gillott, Birmingham.

SCOTLAND.

BOOKBINDERS.—Henderson and Bisset, Edinburgh.

BOOKSELLERS AND PUBLISHERS.—D. Wyllie and Sons, Aberdeen; Alexander Gardner, Paisley; Lewis Smith and Son, Aberdeen.

CARVERS AND GILDERS.—Hay and Lyall, Aberdeen; Hugh Paton and Sons, Edinburgh; James McClure and Son, Glasgow.

ENGRAVERS.—W. and A. K. Johnston, Ltd., Edinburgh.

GEOGRAPHER.—George Harvey Johnston, Edinburgh.

LITHOGRAPHERS, PRINTSELLERS, AND PRINTERS.—Walter MacLean, Glasgow; Taylor and Henderson, Aberdeen; Doig, Wilson and Wheatley, Edinburgh.

MUSIC SELLERS.—Paterson and Sons, Edinburgh; Methven, Simpson and Co., Dundee.

PHOTOGRAPHERS.—Charles Albert Wilson (G. W. Wilson and Co., Ltd.), Aberdeen; T. and R. Annan and Sons, Glasgow; Robert Milne, Ballater.

STATIONERS, ETC.—James Lumsden, Son and Co., Glasgow; John and James Cowan (Alex. Cowan and Sons, Ltd.), Edinburgh.

TYPEFOUNDERS.—Miller and Richard, Edinburgh.

IRELAND.

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Silicate of Soda.	Chloride of Magnesium.	Chromic Acid.
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Copper Precipitate.	Cyanide of Potassium.	Hypochlorite of Soda.
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The World's Paper Trade Review

A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 5. LONDON: FEBRUARY 4, 1898. EVERY FRIDAY. PRICE SIXPENCE.

THE MANUFACTURE OF

Waterproof Paper, Millboard, etc.

The Use of Waste Lyes from Sulphite Works.

The dark coloured waste lyes from sulphite cellulose factories, which lyes smell of sulphurous acid and have a neutral reaction, contain as essential constituent the lime compound of one or more organic substances of an acid character, together with sulphite or acid sulphite of lime. If the lye is mixed with solutions of salts of protoxide or oxide of iron, or mixtures of these salts or of (salts of) lead, preferably in quantities equivalent to the lime percentage, liquids are obtained which are particularly suited for the manufacture of waterproof paper, pasteboard, millboard, and the like.

According to a process introduced by Dr. Paul Remy (for which a patent has been taken out in Great Britain), these liquids are suitable for sizing inferior papers, their cheapness commending them for that purpose. A paper material saturated with one of these solutions of suitable concentration however only receives after treatment in a dry heat the property of being impermeable to water. A temperature of from 70 to 80 deg. C. is sufficient for this purpose. When using temperatures above 100 deg. C. a limit is reached, dependent upon the properties of the paper material, which must not be detrimentally affected thereby (such as becoming brittle). The darkly tinted paper in particular when using dark lyes, can, if necessary, be washed in water without losing its waterproof character, until it has assumed a lighter tint, and no longer gives off colouring constituents to the washing water (which constituents appear to consist of the iron compound of a tannin-like substance), whereupon it is submitted to a drying operation. Lead salts are less suitable than iron salts on account of their poisonous nature and the tendency of the paper to darken subsequently.

The impregnating liquids, prepared as above, contain according to the heavy metal salts chosen, other salts having no action (such as calcium chloride, if chloride or iron was taken). This may be avoided by the use of sulphate salts, or by the addition of a quantity of sulphuric acid equivalent to the lime, filtering off the separated gypsum, and dissolving the hydrated iron oxide sludge in the filtrate whereby solutions can be obtained that are free from such above-named salts. The process can also be modified in such a way, that first all lime is precipitated by carbonate of soda ammonia, or the like, and then the lime precipitate is filtered off and the necessary quantity of iron salt is added to the filtrate.

Example 1.—100 cube c.m. of ordinary unconcentrated waste lye of sulphite cellulose, smelling of sulphurous acid and having about 0.83 grammes of lime (CaO), are mixed with aqueous solutions of 2½ grammes of perchloride of iron of 66 p.c., or 4½ grammes of crystallised sulphate of iron, and the mixture is then neutralised by addition of some lye, soda solution, ammonia, milk or lime, or the like. For the production of concentrated solutions the mass is subjected to partial evaporation, preferably before the neutralisation, whereby a portion of the sulphurous

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acid is directly removed. The alkaline reacting substances can also be first added, the addition of the iron solution then being effected after the filtering.

Example II.—100 cube c.m. of the waste lye of sulphite mentioned in example I. are mixed with dilute sulphuric acid containing 1·45 grammes of H_2SO_4. In this solution is suspended a washed iron oxide or protoxide slugde precipitated from about 3 to 4 grammes of sesquichloride of iron, or from about 5 to 6 grammes of sulphate of iron by means of suitable alkaline reacting substances, until the smell of sulphurous acid has disappeared. The reaction can be accelerated by heating. If the solution still shows a weak acid reaction, more alkali is added and the mass is filtered. The following will serve as an example of the method of practically carrying out the examples I. and II. In an open cast-iron pan which is advantageously coated with lead and provided with a stirring apparatus, the usual waste sulphite lye, which smells of sulphurous acid, is heated to 80 deg. or at most 100 deg. C. A neutralisation by means of lime or chalk sludge is then effected, until lithmus paper is no longer reddened. A deposit is rapidly formed consisting of sulphite of lime, and the clear solution can be decanted from the deposit. The solution is then mixed with a soluble protoxide or oxide of iron-salt, in proportion to its percentage of lime. For this purpose ferrous sulphate or perchloride of iron is taken. After separation of the gypsum the liquid is separated therefrom by decantation. 1.000 litres of waste sulphite lye of 5·5 deg. Bé require about 63 kilos. chalk sludge for neutralisation. There result about 810 litres of clear lime salt solution. An addition of 53 litres of ferrous sulphate solution containing about 23 kilos. of ferrous sulphate will precipitate the gypsum, giving 850 litres of finished impregnating liquid of 6 deg. Bé. If commercial perchloride of iron, containing 66 p.c. of $FeCl_3$ be taken, a quantity hereof equivalent to the preceding quantity of ferrous sulphate is used; the second decantation or filtering is in this case done away with, as no gypsum is formed that requires to be removed. When using this material also lighter tints are produced on the impregnated paper. When using ferrous sulphate such lighter tints can be obtained by the addition of acetic acid to the water in which the paper is rinsed.

Example III.—100 parts by weight of concentrated black coloured neutral waste lye of sulphite cellulose, of 34 to 35 deg. Bé that does not smell of sulphurous acid (about 53 p.c. dry residue with 4·4 p.c. CaO) are diluted with so much water that the carbonate of lime, separated by the addition of a solution of 9 parts calcined carbonate of soda, is still deposited when allowed to stand, whereupon there is added to the decanted liquid a solution of 30 parts of crystallised acetate of lead. The mixture of these two solutions is not to be heated because a precipitate would in this case be formed. It can however be stored for a long time for use, at ordinary temperature. Unsized paper saturated with one of these liquids and then dried and heated for from 4 to 2 hours at a temperature of from 80 deg. to 130 deg. C. will be found to be impervious to water.

Pearl Hardening.

A patent has recently been granted relating to the manufacture of pearl hardening, etc. The process consists essentially in treating or boiling gypsum or other sulphate of lime in boiling hydrochloric acid, either by itself or with the addition of water, and subsequently separating out or crystallising the sulphate therefrom in the form of fine crystals. It is primarily intended to be applied to sulphate of lime, obtained in a more or less impure state, as a waste or bye-product in certain manufactures, though it may also be applied to gypsum or other natural sulphate of lime.

The lime material to be treated may first be washed in water to remove any impurities, capable of being so removed, and it may also be treated with sulphuric acid if desired, to convert into sulphate any free or carbonate of lime that may be present. There is boiled a quantity of hydrochloric acid (HCl) with or without the addition of water in a suitable vessel, and to this is added the lime material to be treated, either dry or wet, as found most convenient. The lime material is acted upon by the boiling liquor and becomes crystalline, and is continually added to the boiling liquor, until the contents of the vessel becomes thickish. The mass may be boiled until it is all crystalline in the open vessel, or if found to give better results the vessel may be closed and the boiling take place under pressure.

If desired, the lime material may be first mixed with the hydrochloric acid cold, either by itself or with the addition of water, and then boiled either in an open vessel or under pressure, but it is preferred to add the said material to the boiling liquor.

During the boiling the mass may be agitated to assist crystallisation. After the boiling the mass is transferred to a vacuum filter, filter press or other suitable form of filter, and the solid matter consisting of crystalline sulphate of lime is taken out.

The clear liquor obtained from such filters is then passed into shallow vessels or slabs to cool, or into other suitable cooling vessels, and the sulphate of lime in solution therein crystallises out. The remaining liquor, being mainly hydrochloric acid, is pumped back into the boiler or heating vessel, and used again with a fresh charge of the material to be treated.

In a modification of the process only sufficient of the raw sulphate of lime is dissolved in the boiling acid, with or without the addition of water, so as to keep the solution in a clear condition, and this solution is then run into shallow vessels or slabs to cool, when the sulphate crystallises out, the remaining liquor being pumped back again as before, but the former process gives a larger yield.

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Paper and Paper Stock.

AMERICAN IMPORTS & EXPORTS.

The following imports and exports of paper and paper stock are for the month of November—the latest period for which the official figures have been compiled by the Treasury Department—supplied to the *World's Paper Trade Review* by the Associated Trade and Industrial Press, of Washington, D.C.:—

IMPORTS.

The total amount of crude paper stock amounted to 231,328 dols., as against 220,835 dols. worth the year before. The total for the eleven months amounted to 2,881,626 dols., as compared with 2,674,638 dols. worth for the corresponding period of 1896.

Of this total were 5,941,705 pounds of rags other than woollen, valued at 93,050 dols., as compared with 4,768,463 pounds of rags other than woollen, valued at 49,425 dols. The eleven months total amounted to 662,894 dols., which was the value of 48,525,670 pounds of rags other than woollen imported in 1897, as compared with the imports of 1896, which were 33,807,795 pounds of rags other than woollen, valued at 513,676 dols.

All other crude paper stock not otherwise specified amounted in November to 138,278 dols., against 171,410 dols. worth the year before. The total for the eleven months amounted to 2,218,822 dols., as compared with 2,160,962 dols.

The dutiable imports of manufactures of paper amounted to 266,238 dols., against 201,835 dols. worth in November, 1896. The total for the eleven months amounted to 2,881,626 dols., as compared with 2,674,638 dols. worth last year.

The countries imported from were the United Kingdom, whose shipments in November amounted to 70,406 dols., against 49,476 dols. worth last year. The total for the eleven months amounted to 534,489 dols., as compared with 493,874 dols. worth the year before.

The shipments of Belgium to the States amounted to 6,832 dols., as compared with 5,457 dols. worth last year. The total for the eleven months amounted to 82,181 dols., as compared with 73,954 dols. worth last year.

Imports from France amounted to 22,265 dols., against 16,944 dols. worth last year. The total for the eleven months amounted to 192,736 dols., as compared with 189,167 dols. last year.

Imports from Germany amounted to 154,215 dols., against 115,915 dols. worth last year. The total for the eleven months amounted to 1,715,580 dols., as compared with 1,737,045 dols. worth last year.

The United States received from other countries in Europe shipments to the value of 4,465 dols., against 2,437 dols. worth last year. The total for the eleven months amounted to 54,269 dols., as compared with the imports of last year, which were valued at 51,173 dols.

Shipments from Japan in November amounted to 13,402 dols., against 9,369 dols. worth the year before. The total for the eleven months amounted to 175,746 dols., as compared with 177,588 dols. worth the year before.

Shipments from other and scattered countries amounted to 3,655 dols., against 1,749 dols. worth last year. The total for the eleven months amounted to 26,025 dols., as compared with 30,565 dols. worth during the corresponding period of last year.

Books and other printed matter were imported free during November to the amount of 165,351 dols., against 155,180 dols. worth in the same month of last year. The total during the eleven months amounted to 1,590,399 dols., against 1,673,682 dols. worth imported in 1896.

The dutiable imports of books and other printed matter amounted to 148,068 dols., against 138,114 dols. worth last year. The total for the eleven months amounted to 1,242,468 dols., as compared with 1,288,260 dols. worth last year.

EXPORTS.

The total domestic exports of paper and manufactures of paper amounted in November to 425,585 dols., against 237,461 dols. worth last year. The total for the eleven months amounted to 4,014,812 dols., as compared with 2,577,130 dols. worth last year.

CHINESE PAPER FIBRE. — Mr. Joseph Watson, secretary of the Blackburn Chamber of Commerce, has received from Mr. Bourne, the leader of the commercial mission to China, a consignment of tree bark, the fibre of which is used by the Chinese for making paper, two quires of which Mr. Bourne sends as specimens of their manufacture. The tree grows freely in provinces mentioned in a letter by Mr. Bourne, who believes that the cleansed fibre, ready for use, could be bought at less than £5 per ton, and easily brought down the West River to Hong Kong. The paper, which is of different thicknesses, is the colour of parchment, and of remarkable toughness. The samples, together with the specimens of bark, will remain at the head offices of the Chamber, in Richmond-terrace, for the inspection of paper manufacturers and others interested.

THE SALT UNION, LTD.—At a private meeting held on Friday last, at the Institute of Chartered Accountants, to which all holders of 500 shares and upwards were invited, the following resolution was unanimously passed:—"That it is desirable that a committee of seven shareholders, with power to add to their number, be appointed to approach the directors in a friendly spirit, and to take such other steps as they may think advisable, with the view of improving the management and prospects of the company's business." The following gentlemen were elected to serve on the committee:—Messrs. J. W. Brett, Edward Edmondson, James Head, J. B. Hunter, William S. M'Dowell, Thomas B. Royden, and Frederick Walker.

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Steam Production Up-to-Date.

MODERN STEAM GENERATING PLANT AND ITS MAKERS.

Economy, Efficiency, and Safety—The Choice of a Boiler—The Necessity for Economy in Fuel—The Evolution of the Boiler—Cylindrical Boilers—Water-Tube Boilers.

In every department of modern industrial production in which steam is employed for power purposes, the dominating considerations have long been regarded as being those of economy in its generation, efficiency in its utilisation, and the reduction to a minimum of every element of danger in connection with its application as a motive agency. As time has advanced engineering science has enabled a very high degree of perfection to be attained in presenting ways and means of securing the realisation of the desiderata we have mentioned. Nevertheless, the demands of the times are ever increasingly exigent in these particulars, and, engineering being essentially progressive, it may be fairly assumed that finality has not yet been approached. At the same time the standard at which we have arrived is an unquestionably high one. This very fact, indeed, presents not a few difficulties to discriminating steam users who naturally desire as nearly as possible to be up-to-date in matters of mechanical equipment, so as to reap all possible advantages in production which are attainable thereby, and be consequently placed in a favourable position while trading in these ultra-competitive times.

Not the least of the difficulties to which we refer is the selection of the system of steam generation best suited to individual requirements. When a paper or paper pulp manufacturer finds it necessary to replace his existing stock of boilers, let us say, with a new installation, he desires not only to secure the most reliable type of boiler specially adapted to his purpose—and here local conditions, circumstances of production, and other considerations have to be reckoned with—but one which, durable in itself, is not likely, from one cause or another, to become practically obsolete before only a comparatively few years have passed. The expression "reliable," too, is a wide one, and whilst it may cover a multitude of merits, it may also obscure a wealth of weaknesses. To be really reliable in the proper sense of the term a boiler should preferably hail from the works of a maker of resource and repute. Of whatever type it be it should be manufactured from first-class materials only, and embody in itself the outcome of the best workmanship and constructive practice. It should also be built with a clear appreciation on the part of the maker of the work it has to perform and the conditions under which that duty has to be performed; or, if selection be made from ready-made stock, the boiler should be capable of undergoing a searching scrutiny in every particular mentioned by a competent and trustworthy engineer.

Then come a host of further considerations: One may instance a boiler the quality of the steel plates of whose shell are beyond reproach, and whose fittings embody "all the latest improvements," which may yet be most costly in the consumption of coal, and consequently in the production of steam. On the other hand one may find a boiler less pretentious in various particulars give very economical results in everyday work. The question of safety in the matter of liability to explosion is another point which cannot be too carefully regarded. The discrimination which should be exercised in the selection of boilers should be extended in equal measure to the accessories, such as mechanical stokers, economisers, and the like, as well as the smaller fittings and connections, without which the modern steam generating plant is incomplete, and consequently incapable of producing steam with the maximum of economy. It is never too late to emphasise, also, that mere cheapness in first cost, which naturally in these days is apt to receive more than its due of attention, is far from being the main consideration. A first-class boiler is not necessarily an expensive one, even as good boilers go, but the absolutely cheap one turns out in the long run—and it is not usually a very long run either—to be dear at any price.

These general observations may seem platitudinous to some, but one sees their unquestioned truth so frequently ignored that it is doubtful whether their importance can be too often reiterated. Assuming, however, that they are "carried unanimously," we may proceed to glance generally at the question of economy in the generation of steam. Of course the very *raison d' etre* of steam production on up-to-date principles is to secure, as we indicated in our opening sentences, the maximum of economy, *plus* that of efficiency, *plus* that of safety in the utilisation of steam as a motive power. It must be remembered that in the manufacture of paper, the cost of coal per ton of paper produced represents such a considerable item in the aggregate working expenses of a mill that the whole question of the employment of steam and the maintenance of motive power plant is one which is entitled to continual attention at the hands of the paper and paper pulp manufacturer. At the moment the price of coal is necessarily high, and it may be fairly anticipated that no appreciable reduction will be recorded for some time to come, while advances seem more within likelihood.

It is worth bearing in mind that the cost of coal per ton of manufactured material forms a convenient basis of calculation when the question of of economy in the matter of establishment and working expenses comes to be seriously tackled. The fuel bill is in more respects than one a veritable *bete noir* to the larger steam user, and nowhere through-

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out his establishment is there greater likelihood of leakage in expenses taking place than in the department upon which he so often prides himself most—his boiler house. Anyhow the exigencies of competition and the uncertainties of the labour market render it imperative that the manufacturer, no matter in which trade he may be engaged, should generate his steam for motive power purposes at the smallest possible outlay and derive from it to the very utmost limit the full energy which it is capable of producing.

That necessity for economy in every branch of the motive power arrangements of a mill is generally recognised, is evidenced by the anxiety which engineers have of recent years displayed in perfecting every detail in the construction of steam engines—the compounding and tripling of engine cylinders, the use of automatic expansion gears and of other cleverly devised accessories. Indeed, it is a moot point whether the question of securing absolute economy in the generation of steam has not suffered somewhat from neglect at the hands of steam users, who seem mainly disposed to watch with eager eyes the results of the experiments made by inventive engineers in arriving at the best means of reducing the quantity of steam consumed by the engine in producing a given amount of power. This, however, is by no means unimportant in itself, for it is by the size of an engine and the degree of economy which it is capable of realising in supplying a given amount of power, that the dimensions of a boiler are chiefly regulated. Then, as regards the boiler house, the increased attention which has been directed of late to the use of forced draught, fuel economisers, mechanical stokers, and other fuel-saving adjuncts, serves to indicate that wise manufacturers fully realise the necessity of obtaining every pound of steam at the lowest possible cost, and of deriving every atom of power out of it that can be expressed. In no class of establishment is this more necessary than in paper mills, where the boilers have usually other duties to perform besides the supply of steam to the engine.

Although it is no part of the function of these articles to be historical further than it is necessary to elucidate the evolution of one system of steam generation or another, it may not be out of place here, in the briefest way, to glance retrospectively at the subject of steam boiler construction. Investigations in search of what might reasonably be regarded as the first boiler used for any kind of power purpose resemble those of Japhet in search of his father; but something approaching a result in this direction appeared about the middle of the 17th century, and took the form of a globular iron vessel set in brick work. More tangible were the advances of Savery, who constructed a vertical boiler of cylindrical form fired from the outside, and others of his contemporaries. Internal flues were first introduced in 1769. At the commencement of the present century a boiler, of strange construction to our modern eyes, was made with a granite shell having a copper flue which traversed its length three times. About the same period James Watt, who had previously adopted what was called the "Wagon" boiler, built a boiler having a stout wooden shell strongly hooped, and an internal copper tube. By this time, however, wrought iron was most commonly used in boiler construction, and its use continued to be general until steel commenced to largely supersede it about the year 1870.

The egg-ended boiler made its appearance about the beginning of this century, and was closely followed by the "Cornish" or single-flued type, and later by the "Lancashire," or two-flued. In 1820 a departure from the then accepted forms of boiler was presented in the Butterley boiler, and from this time various other designs, both as to the form of the shells and the shape or arrangements of the flues, made their several *debuts*. The superiority of the cylindrical type, however, was generally recognised, and with modifications, chiefly internal, it became the standard type, which position, it may be said, it retains more or less to-day. Upon it was modelled the Galloway boiler, which was introduced in 1849, and subsequently others of hardly less latter-day world-wide celebrity.

It is often erroneously supposed that what are now known as water-tube boilers are of quite recent introduction. This is a mistake: the first water-tube boiler dates back to 1766, when it was made by Blakey, one of Watt's contemporaries. The evolution of this type of boiler is no less complex and interesting than that of the other more conventional types, and we shall have full opportunity on a future occasion to enter into detail concerning it. The water-tube boiler is rapidly gaining in favour, and several of the best known, as well as some of the most recently introduced, designs have been found to give results in practice which entitle them to every consideration at the hands of the power-user.

With fuel economisers, mechanical stokers, and other practically indispensable accessories to economical steam-generating plant, we have not space to deal, even in general terms, in this article, but they will receive a full measure of attention in due course. In forthcoming articles we propose to deal specifically with representative systems of steam generation and types of boilers which present advantages on the scores alike of economy and efficiency, not, of course, overlooking the third point in our triumvirate of qualifications for confidence, safety. In doing so we shall contribute an added interest to the articles by giving some account of the places at, and the conditions under, which, the boilers and other apparatus are manufactured, and also some indication of the personalities to whom we are indebted for much that is noteworthy in the history of latter-day steam production.

S.O. CONTRACTS.—Tenders were received at H.M. Stationery Office, London, on Thursday, for the supply of paper to the Stationery Office, Dublin.

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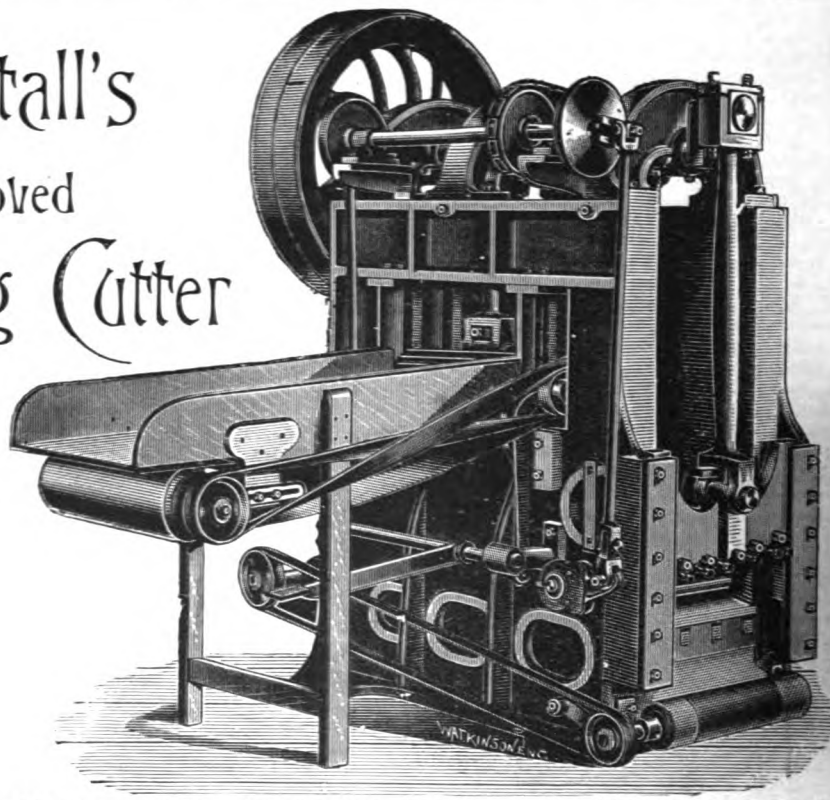
BENTLEY

Papermakers

BURY, nea

Nuttall's Improved Rag Cutter



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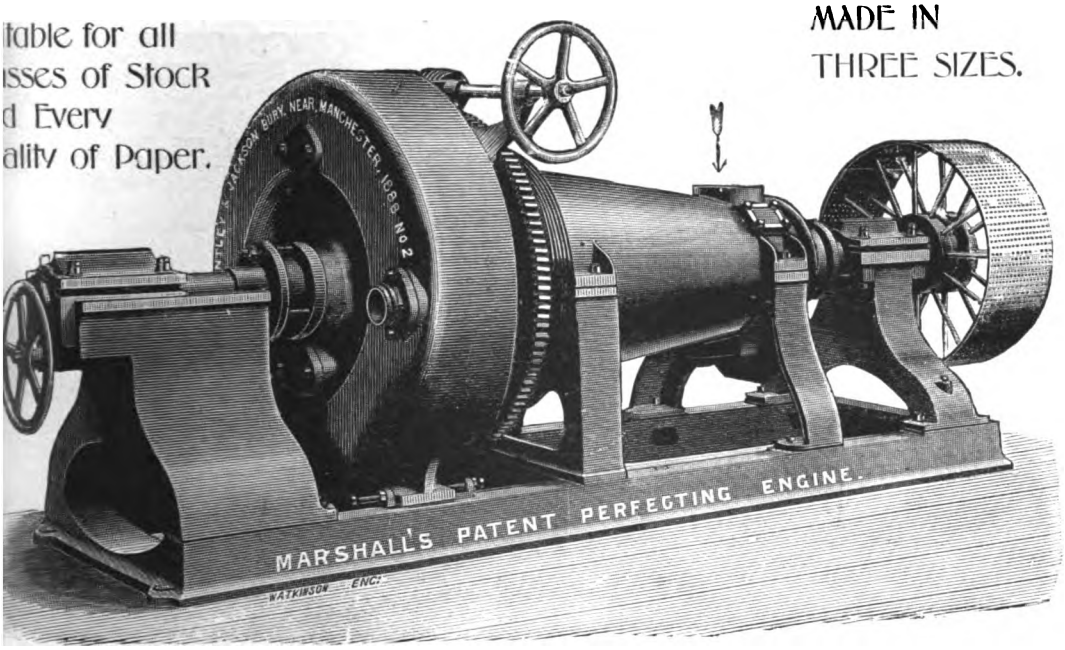

This Engine will produce a Better Finished, Stronger, and More Even Sheet of Paper from the same Materials than can be produced by any other Mechanical Process, and at the same time will REDUCE the TIME and POWER Required for Beating.

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THE

Driving of Papermaking Machines.

The accompanying drawings relate to a method of driving papermaking machines for which a patent has recently been granted to Mr. S. Milne, of Edinburgh.

Fig. 1 shows a skeleton elevation of a papermaking machine for the purpose of illustrating the application of the improved driving gear.

Figs. 2 and 3 show an elevation and plan of the gearing for machines illustrated in Fig. 1, when it is driven by one belt *a* only. The main driving pulley A is shown at one end and the tightening pulley A^1 at opposite end. The cone pulleys *b* can be moved across the belts *a* or along the shafts to give the necessary variation of speed to each member.

Figs. 4 and 5 show a plan and elevation of the gearing when two belts *a* are used. When the driving pulley A is near the centre of the machine one belt would be taken towards each end of the machine and tightening pulleys A^1 arranged at the ends as shown.

In each of the arrangements, Figs. 2, 3, 4, and 5 the belt *a* is made transversi, and the pulleys and cones are so arranged that one side of it comes in contact with cones only, while the other side comes in contact with the other pulleys only, which allows the belt to fit the surfaces it comes in contact with properly and without being strained, and so save wear and tear of belt. In certain machines it may be desirable to place the main driving pulley or pulleys A on one of the cross shafts which gives motion to a member of the machine. The member on which the driving pulley or pulleys is fixed would then have a positive speed, all the others being adjustable by the cones to suit. There can of course be only one positive speed in any machine.

Fig. 6 shows an arrangement of gearing

FIG 1.

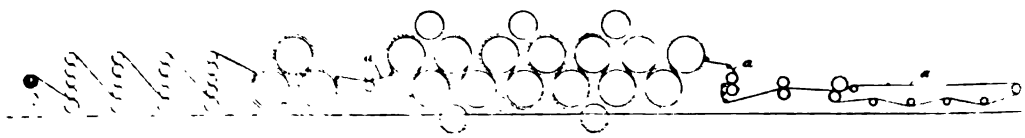


FIG 2

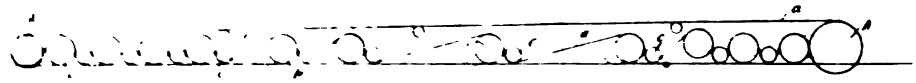


FIG 3

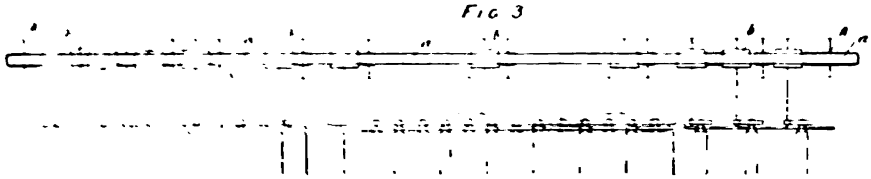
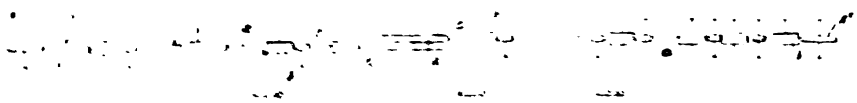


FIG 4.

FIG 5



for driving a machine (Fig. 1) by one continuous rope or V-shaped band *a*. In this case the guide pulleys *c* are dispensed with, as the rope *a* will run over the pulleys in any direction, the gearing being made to suit the direction of rotation required. It may in certain cases be necessary to use guide pulleys *c* should the shafts be so far apart as not to give sufficient lap on the pulleys to ensure that slipping will not occur. This arrangement has the main driving pulley A at one end and the tightening pulley A^1 at the other end, same as in Fig. 2. The speed of each member is varied by altering the effective diameter of the pulleys, by moving the sides between which the rope runs to or

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from each other by means of suitable gearing.

Figs. 7 and 8 show an elevation and plan view of an arrangement of gearing having two ropes *a*, the main driving pulley A being near the centre of the machine. It may, however, be in any position. For the purpose of illustration, the shaft is shown on which the driving pulleys are placed geared direct to one of the members, which is thus driven at a positive speed. There may be one such drive in a machine, the speed of the other members being varied to suit. There is a tightening pulley A^1 at each end.

Fig. 9 is an elevation showing an arrangement with three ropes *a*, the driving pulley A being at one end. In this case one of the ropes is led from the main pulley A over or under say three of the variable pulleys *b* under a guide pulley *c* and thence along to the tightening pulley A^1 at the other end.

FIG. 6.

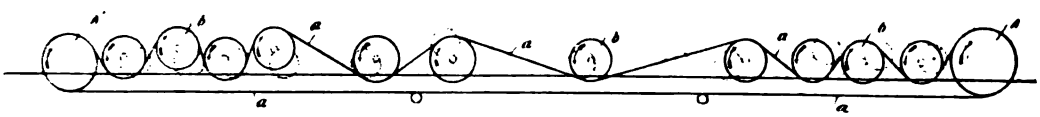


FIG. 7.

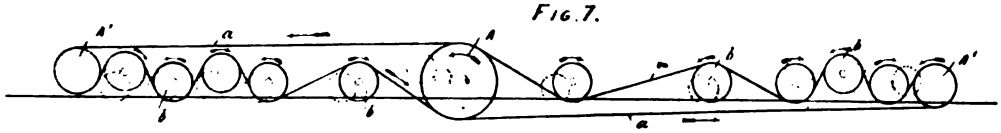


FIG. 8.

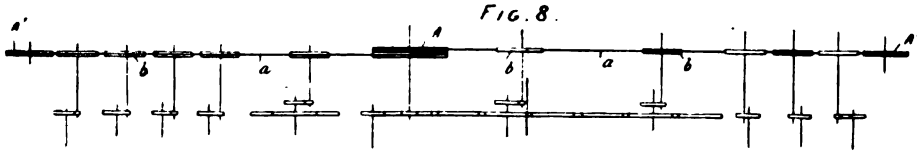
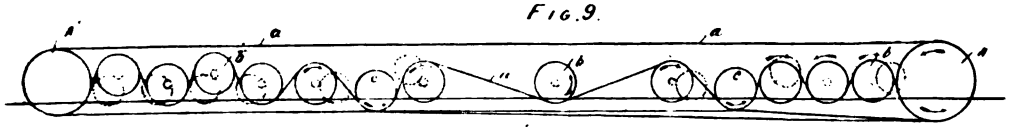


FIG. 9.



The guide pulley could of course be used as a tightening pulley, and the rope led directly back to driving pulley A.

The second rope *a* is led from the main driving pulley A under a guide pulley *c* over or under say three variable pulleys *b* under another guide pulley *c*, thence along to tightening pulley A^1 at end and back to main driving pulley A. This rope may of course be returned to main driving pulley A from the second guide pulley, which could be used as a tightening pulley.

The third rope *a* is led from main pulley A under a guide pulley *c*, then over or under say five variable pulleys *b*, thence round tightening pulley A^1 and back to main pulley A.

The main driving pulley A may of course be placed nearer centre of machine, and one or more ropes go towards each end as may suit circumstances.

The tightening pulleys A^1 may be placed in any position either above or below the other pulleys. In cases where more than one rope is used they may run alongside each other, using one as the driving power for each member running on a variable pulley, the others running on a pulley which is loose on shaft. There may also be two ropes giving power to any one member, the variable pulley being made with two variable grooves.

RAG DUSTER, ETC.—An invention has recently been patented relating to the dusting and cleaning of wool, waste, rags, and the like. It consists of two surfaces having teeth set so that when an oscillating motion is given to one or both of the surfaces it will carry the material between the two surfaces. The spaces between the teeth are provided with a sieve or grate to allow the dust to escape, which may be assisted by blowing or exhausting air through both surfaces during the passage between the surfaces of the material. The advantage claimed is that the process takes the dust out without causing waste or breaking the fibre.

ST. DENNIS CROWN CHINA CLAY CO., LTD.—Registered with a nominal capital of £5,000 in £1 shares. Object, to adopt an agreement with L. Clow, and to dig, search for, quarry, get, win, sell, work, and deal in china clay, mica, and other mineral substances, in Devon, Cornwall, or elsewhere. Table A mainly applies.

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The Papermakers' Association.

This Association, founded in 1872, has been instrumental in accomplishing work resulting in great benefit to the trade. During recent years a closer connection has existed between the northern and southern sections, and this working in unison is to be strongly recommended, as matters taken in hand are thoroughly discussed and all interests carefully studied. It is to be hoped that the members of the Scottish Association will soon throw their lot in with their English brethren, so that we may have a representative British Association.

The members of southern committee are :—Messrs. G. F. Busbridge, A. Cannon, G. Chater, C. T. Drew, H. Green, T. H. Hepburn, A. Reed, J. Thomas, and G. Wilmot. On the northern committee are :—Messrs. R. Barton, H. Clegg, J. Cronshaw, S. Chadwick, J. P. Cornett, J. Dixon, R. Duxbury, J. Hacking, B. Haigh, T. Y. Nuttall, J. E. Potter, R. P. Skelton, and J. E. Jepson (hon. secretary).

The president is Sir John Evans, K.C.B., F.R.S., and the vice-president, Capt. Partington, J.P. ; chairman, Mr. Lewis Evans ; hon. treasurer, Mr. T. A. Hodgkinson ; and hon. secretary, Mr. G. Humphreys-Davies, the offices being at 5, Laurence Pountney-lane, Cannon-street, London, E.C.

In our last issue we briefly reviewed the Association's calendar for 1898, from which we now extract the following particulars, the portrait blocks having been kindly lent for the occasion :—

Sir John Evans, president of the Association, was born November 17th, 1823. He commenced papermaking with his uncle, Mr. John Dickinson, in 1840, became a partner in the firm of John Dickinson and Co. in 1850, and married Mr. Dickinson's youngest daughter in the same year. Sir John Evans is president of the British Association for this year, and took the chair at their meeting in Toronto, Canada, August, 1897. He has been president of the Numismatic Society since 1874, was president of the Society of Antiquaries in 1885, of the Geological Society, 1876, and vice-president and treasurer of the Royal Society since 1879. He has received the honorary degrees of D.C.L., LL.D., and Sc.D. He was created K.C.B. in 1892, and J.P., D.L. of Hertfordshire, chairman of Quarter Sessions,

SIR JOHN EVANS.

CAPT. PARTINGTON.

vice-chairman of the County Council, and was High Sheriff in 1891. Among the numerous papers and books which he has written are "Ancient British Coins," published in 1864, "Ancient Stone Implements of Great Britain," 1872, and "The Ancient Bronze Implements, Weapons, and Ornaments of Great Britain and Ireland."

Mr. Edward Partington commenced to work at papermaking at the age of 12 years, and at the age of 23 became manager of the paper mills at Heap Bridge, near Bury, and four years later, in 1864, joined the firm of Olive Bros., of Woolfold. In 1872 Mr. Partington turned his attention to the use of wood fibre for papermaking, and joined the original syndicate of The Ramsbottom

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Paper Mill Co., Limited, for the purpose of making paper pulp from wood by chemical process. Mr. Partington shortly after became interested in the Turn Lee Mills, Glossop, of which, in 1876, he became sole proprietor. In 1893 Mr. Partington devoted much time to the process of making paper pulp from wood by the bi-sulphate of lime process, and spent many years in making it practicable. In 1888 Mr. Partington was instrumental in forming a company for the purpose of making sulphite pulp, at Barrow-in-Furness, and, with Dr. Carl Kellner, founded the Kellner-Partington Paper Pulp Co., Limited, which has large works in full operation at Barrow-in-Furness, in Norway and Austria. Mr. Partington holds several public offices in Glossop, is a magistrate for the county of Derby, and president of the British Wood Pulp Association.

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The British Wood Pulp Association.—An Apology.

To the Editor of the WORLD'S PAPER TRADE REVIEW

SIR,—Referring to our letters that appeared in the *World's Paper Trade Review* of the 28th ult., we are assured that the Committee of the British Wood Pulp Association had not the slightest intention of making statements with regard to the Commercial Court with the object of deceiving the Secretaries of Foreign Associations, and we are quite ready and willing to accept their statement, and fully acquit them of any improper object; and have much pleasure in apologising to them for having made statements which we are now satisfied on their assurance were incorrect, and we shall be obliged if you will insert this letter in your next issue.

Yours obediently,
INCE, COLT & INCE.

St. Benet Chambers,
Fenchurch-street, E.C.
February 3rd, 1898.

"Exportation of Canadian Paper to Great Britain."

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—Your editorial paragraph under this heading in last week's *Review* is calculated to convey a wrong impression as to my object in visiting Canada.

My hope was to assist in diverting that trade now being done in paper with the United States to Canada. It is impossible to deny that the present trend of the news trade especially is towards the United States. Seeing, however, that the States do not produce any appreciable quantity of the wood necessary for this trade, but have to import it from Canada, it seems reasonable to urge that if the Old Country makers are to loose the news trade, Canada, and not the States, should secure it. Certainly every Englishman—even papermakers—would prefer to see another branch of the Empire get it rather than a foreign state.

When in Ottawa I urged upon the members of the Dominion Government, whom I had the honour of interviewing, the importance of establishing some protective export duty on pulp wood going into the United States, and I would urge upon you, Sir, the necessity for influential pressure being brought to bear upon the Colonial Office here with the object of securing this on the tariff revision, which is shortly to take effect between Canada and England.

British news mills have, in the past, had to face unfair competition from United States mills, whose surplus output is rushed over here at any price to keep up home quotations. Repeated and prolonged spells of such competition are certain to occur whenever the American home market is depressed, unless some such action as suggested above is mutually taken to protect English makers on the one hand, and to foster Canadian home industry on the other, and to secure to the Empire on an economic basis a trade which is naturally her own.

I am, Sir,
Yours faithfully,
GEO. MAWSON.

97, Queen Victoria-street, E.C.,
February 2nd, 1898.

Great Paper Trust in U.S.A.

The Combination of "News" Mills Successfully Carried Through.

CAPITAL 45,000,000 DOLS.

An advice from New York, dated January 31st, states that "the International Paper Co. was incorporated to-day (Monday) under the laws of New York."

The capital is given as 45,000,000 dollars. The amounts previously mentioned, before arrangements were complete, were 35,000,000 dollars and 50,000,000 dollars respectively.

The company will control seventeen mills, representing the "news" manufacturing interests of the country. The daily output is estimated at 1,387 tons.

The following companies are in the combination:—Otis Falls Pulp Company, Livermore Falls, Me.; Glen Manufacturing Company, Berlin, N.H.; Rumford Falls Paper Company, Rumford Falls, Me.; Fall Mountain Paper Company, Bellows Falls, Vt.; Winnipiseogee Paper Company, Franklin Falls, N.H.; Webster Paper Company, Bangor, Me.; Montague Paper Company, Turner's Falls, Mass.; Russell Paper Company, Lawrence, Mass.; Falmouth Paper Company, Livermore Falls, Me.; Haverhill Paper Company, Haverhill, Mass.; Glens Falls Paper Company, Glens Falls, N.Y.; Hudson River Pulp and Paper Company, Farmer's Falls, N.Y.; Niagara Falls Paper Company, Niagara Falls, N.Y.; Lake George Paper Company, Ticonderoga, N.Y.; Herkimer Paper Company, Herkimer, N.Y.; Turner's Falls Paper Company, Turner's Falls, Mass.; Umbagog Pulp Company, Livermore Falls, Me. Other concerns will probably be incorporated at a later date.

"THE WINDSOR MAGAZINE" for February contains a very interesting contribution by Lieut. R. E. Peary, on "Hunting Musk-Oxen near the Pole." George Augustus Sala's first and last work is treated by his widow, there being included portraits and *facsimile* manuscripts. "A wonderful Parliamentary portfolio," is particularly entertaining. The contents, which include further chapters of Max Pemberton's story, "Kronstadt," are brightly illustrated.

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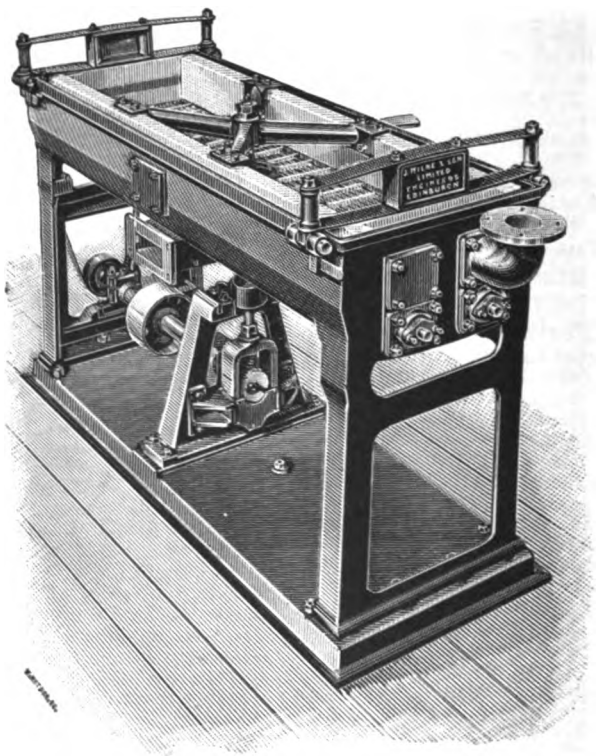

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TRADE NOTES.

THE ALLEGED "TRUST."—A "par" is now going the rounds to the effect that a combine of "news" mills is to be formed. As far as we can learn, there is no truth in this, if it is intended to apply to this country. Possibly some of our contemporaries don't realise the difference between U.S.A. and U.K.!

A. M. PEEBLES AND SON, LTD.—The directors announce that the result of the trading for the six months ended December 31st, 1897, justifies them in paying an interim dividend on the ordinary shares of the company for that period at the rate of 8½ per cent. per annum, as against 8 per cent. for the corresponding period of the previous year. A substantial balance will be carried forward to the credit of the current half-year.

THE GENERAL ELECTROLYTIC PARENT CO., LTD., whose works are at Farnworth, Widnes, and whose nominal capital is £30,000, have just paid an interim dividend of 50 per cent., free of income tax. This payment is the outcome of a sale of some of the foreign patent rights.

THE TOVIL PAPER CO., LTD.—A meeting of the members of this company is called for March 4th, at 14, George-street, Mansion House, E.C. Those who attend will have the opportunity of learning from the liquidator, Mr. Ernest Cooper, how the property of the company has been disposed of, etc.

LAW INTELLIGENCE—COWAN AND SONS, LTD., *v.* THE NORTH BRITISH RAILWAY CO.—This case was heard in Edinburgh in October, and judgment was delivered on Monday last. The applicants disputed the right of the railway company to make any charges for the use of a terminal station in respect of traffic passing from a dock to a private siding. The traffic in this instance was esparto grass landed on the quays at Leith or Granton ex ship direct into railway waggons and conveyed to destination through the Leith and Granton stations. According to the view of the applicants, the stations were used for marshalling purposes only, a service covered by the conveyance rate. According to the railway company, the user of the station was practically that of all other traffic, and in accordance with the decision of the Railway Commission in the case of "Pidcock *v.* the Manchester, Sheffield, and Lincolnshire Railway" (9 Ra. and Ca. Tr. Cases, 45), they claimed to be allowed three-fourths of the station terminal of 1s. 6d. The judgment of the Court allowed one-half of the maximum station terminal.

MESSRS. VACHER AND SONS have removed their retail stationery and copying offices from No. 29, Parliament-street, to Broad Sanctuary-chambers, Tothill-street, Westminster, S.W. Their wholesale stationery, printing, and lithography will be conducted as heretofore at 20 and 22, Millbank-street.

RE J. E. LEATHLEY, trading as J. E. Leathley and Co., 28, Adolphus-street, Bradford, Yorks, rag, etc., merchant, in bankruptcy. A public examination of this debtor will take place on the 9th inst., at 10 a.m., at the County Court, Manor-row, Bradford; the first meeting of creditors was fixed for to-day, the 4th inst.

SANITAS CO., LIMITED.—The directors propose a balance dividend of 1s. per share and a bonus of 9d. per share, making a total distribution for the past year of 13½ per cent. on the fully-paid shares.

PAPER COVERS FOR WATER CLOSETS.—This novelty (which is referred to in our advertising columns) has much to recommend it in the way of cleanliness and as a safeguard against contamination, and therefore we are not surprised to learn that its use is extensive on the continent, in hotels, railway stations, trains, etc. Once the value of the "paper cover" is recognised, the article will have a large sale amongst all classes of travellers.

LEITH AND GRANTON IMPORTS, 1897.—Amongst the imports received at Leith and Granton last year were the following:—

Wood Pulp	75,272 bales	Tissues	37 pkgs.
,,	700 pkgs.	Envelopes	32,358 bales
,,	786 rolls	,,	17,757 pkgs.
,,	837 tons	,,	8 cases
Wood Fibre	180 bales	Esparto	15,932 bales
Cellulose	385 ,,	,,	42,134 tons
Paper Pulp	716 ,,	Millboards	9 crates
,,	212 pkgs.	Pasteboards	72 bales
Pulp	19,058 bales	,,	41 cases
,,	161 pkgs.	,,	109,258 pkgs.
Straw	110,306 bales	Pulpboard	1,299 bales
,,	4,525 pkgs.	,,	184 bags
,,	121 tons	,,	206 pkgs.
Strawboards	33,705 pkgs.	Rags	20,810 bales
Paper	27,661 bales	,,	57 bags
,,	1 box	,,	6,398 pkgs.
,,	292 cases	Stationery	7 casks
,,	24,026 pkgs.	,,	13 cases
,,	4 parcels	,,	10 pkgs.
,,	2,447 rolls	Straw pulp	51 bales
Tissues	234 bales	Alkali	40 casks
,,	4 cases	Paper Finish	10 ,,

THE ENGINEERING DISPUTE.—The reports issued on Monday by the chief centres affected by the recent dispute show that, though the applications for re-engagements were very numerous, most of the employers, in accordance with the recommendation of the Federation, only took on about 25 per cent. of the applicants. In some cases there were no vacancies at all. It is anticipated, however, that in the course of the week the majority of those who are seeking employment will be taken on again.

THE EXPORTS OF PAPER FROM NEW YORK, according to the last weekly list received, included the following:—To London, 5,988 packages; Liverpool, 796 packages; Manchester, 1,421 bundles and 1,430 packages; Hull, 400 bundles and 107 packages; Southampton, 6 packages; Bristol, 26 packages; Carlisle, 41 packages; Dundee, 36 packages; and Glasgow, 690 packages. Shipments to Amsterdam amounted to 6 packages; Hamburg, 11 packages; Havre, 4 cases; British Australasia, 352 packages and 10 bundles; Brazil, 394 packages; B. W. Indies, 1,109 packages; Mexico, 86 packages; and New Zealand, 44 packages.

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Awards

STOCKHOLM.....1866. CHRISTIANIA.....1878.
PARIS.....1878. CHRISTIANIA.....1883.
FREDRIKSTADT...1885. COPENHAGEN.....1888.

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RUSSIA.

RUSSIAN BUREAU OF INFORMATION.—Advices from St. Petersburg are to the effect that a bureau of information has just been established in that city for the purpose of furnishing data in regard to all commercial questions and concerning the credit of business houses. The bureau will be supported by the Government, and it is believed that the idea has been conceived with the intention of encouraging foreigners to develop trade with Russia. By the existence of this bureau it is expected that exporters, importers, or manufacturers can get a correct report as to the standing of any firm with whom they may anticipate any transaction.

—o—

DENMARK.

NEW LINE OF STEAMERS.—Arrangements have been made by Mr. Alfred Christensen, one of the largest shipowners of Copenhagen, for a line of steamers to run between that port and New York direct. The line will take freight for trans-shipment from Copenhagen for all Baltic ports. Mr. Christensen has engaged in the enterprise at the earnest solicitation of prominent merchants and others interested in traffic between the two ports. As Mr. Christensen has at his command a great variety of vessels, he is prepared to meet any requirements that may be made upon the line for either passenger or freight accommodations.

—o—

GERMANY.

GERMAN makers of wall paper have at last succeeded in forming a convention. Combination is reported to have been necessary, as by reckless undercutting prices had reached such a state that no margin of profit was left. Many dealers were able to purchase at exceptional prices by taking large quantities, and they then sent out sample books at lower prices than the one at which the established shops in most cities could buy at. When the manufacturers formed a convention last year the dealers saw the advantage of coming to terms with them, and thus, by steady agitation, it was arranged that certain minimum prices should be maintained.

—o—

UNITED STATES.

AMERICAN MACHINERY FOR FINLAND.—Mr. Josef E. Grandstedt, of Lankon, Aanekaski, Finland, recently visited the Black and Clawson Co. at Hamilton, O., to receive instructions as to the manner of getting up papermaking machinery which is soon to be shipped to Finland.

IT is reported that Messrs. Perkins, Goodwin and Co. have leased the mill of the Frontenac Paper Co., of Dexter, N. Y. The mill will be run entirely on news.

—o—

CANADA.

A NUMBER of Montreal capitalists have completed arrangements for the purchase of the pulp mill on the Jacques Cartier River, owned by Messrs. Reid and Co., of Quebec. and will at once form themselves into a company and actively prosecute the business of pulpmaking. Among the interested gentlemen are Messrs. Strachan, Penny, Law, Currie and Acker.

REFORESTRY COMMISSION REPORT.—The preliminary report of the Reforestry Commission has been issued. This commission was appointed for the purpose of submitting a scheme for the reclamation of large areas of non-agricultural land, now unproductive, and some suggestions for the carrying on of future lumbering operations and pulp wood cutting as the information obtained by them would indicate to be desirable, as a means of preventing similar land, now wooded, from becoming waste. It is recommended that license holders be not allowed to cut any trees for timber or pulp wood logs smaller than will measure 12 inches across the stump, two feet from the ground, unless under special forest conditions, with the sanction and under the supervision of the district forest ranger.

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FRIDAY, FEBRUARY 4, 1898.

The Medway Mills' Smell.

A certain amount of hardship to the defendants seems involved by the decision in this case, reported in our last issue, and we say this with all respect for the olfactory nerves of Mr. and Miss Balston. Of the disagreeableness of the odour we can entertain no doubt, but then it must be remembered that Mr. Balston, who was perfectly well aware of its existence, voluntarily built his house in the immediate neighbourhood of the offending mill. Whether so many years "user" constitutes a right to propagate a nauseous smell was not clearly decided, but on several grounds it is to be wished that the learned judge's decision were appealed from. In these hard times, when we all have to struggle to get a living, it is rather discouraging to witness the many obstacles that are put in the way of industrial enterprises. Where a common and public nuisance is created by their operations, we think an injunction should naturally follow, but it is not a desirable feeling to have—this knowledge that one's commercial existence is at the mercy of any local magnate who may find himself—by his own choice—in the neighbourhood of something "quite too awfully disgusting, don'tcherknow." Query if the plaintiff had not come to the stink, would the stink have gone to the plaintiff, and should we have heard anything about the matter? We are not all in the fortunate position of being able to make paper exclusively from clean white rags, and there is an old proverb about "Live and let live."

A Papermakers' Club.

In many directions it would be a great boon if there were a Papermakers' Club in London. Such an institution, however, to be of value and a success must be started on proper lines, and have the support of the leading men in the trade. We learn that the idea of starting a club has lately been considered by several well-known people in the trade, and that a number of prominent papermakers have already been approached, and have promised their support. It is contended that the paper trade of the country wants a head quarters, which could also be made to serve many useful purposes, such as a bureau of information, etc., etc.

* * *

The American "News" Combination.

The formation of the International Paper Co., to control seventeen of the largest "news" mills in the States, is expected to work wonders. There has been some delay in completing arrangements, but the American trade generally looks upon the consummation of the news combination as one of the biggest events in the history of the industry. It is stated that the tonic effects have already been felt in the price of news paper, which has jumped up several fractions. Paper men are confident that the new company will succeed in correcting many trade abuses. They argue that the high-priced salesmen will be dispensed with, that commissions will disappear, and rents will be cut down appreciably. Another prospective advantage they say will be the saving of railroad freights by the designating of particular mills to make and ship paper to given localities. Then, too, certain unfair demands of the big publishers would be met and dealt with in a sensible manner. Among these are mentioned the credit asked by publishers for white waste. The International Paper Company is also expected to kill the practice of paying out moneys in the guise of commissions to employees of the press rooms and others. The working capital furnished to publishers by the trade is also expected to disappear, as is the renewing of notes and the long time at present allowed for settlements. Such arguments as the above have become quite familiar where combinations are concerned.

* * *

The Importation and Marking of Foreign Goods.

According to a memorandum issued by the Custom House authorities respecting marks on imported goods, it appears that foreign

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goods—such as paper—imported into the United Kingdom which do not bear any marks whatever, either on the goods or on the packages or wrappers, are not required to bear any qualifying statement such as "made abroad," or "made in Germany." Goods sent from abroad and having the name or trade mark of a British manufacturer must also have a definite indication of the country or origin of the goods. The memorandum has already had its effect on British traders. Some of those already cognisant of the Act's real meaning have written to the continental manufacturers and agents informing them that they will not accept imported goods which have any distinguishing trade mark.

* * *

Canadian Sulphite for European Markets.

Canada is gradually growing as a wood pulp producing country, and if the various schemes now under consideration are successfully launched, there will, in the course of a few years, be a very large increase in the production of both chemical and mechanical wood pulps. Persons familiar with the resources of Canada, capitalists and others, are showing an active interest in the development of the wood pulp industry, and naturally they look to England and the continent as available markets. As mentioned in our last issue, St. John, N.B., appears to be viewed as a most suitable location for sulphite wood pulp works. Amongst the various projects may be mentioned that put forward by Messrs. Cushing and Co., and that in which Mr. Julius Spiro is interested. The latter undertaking provides for the building of a sulphite mill at St. John, N.B., with a daily production of 50 tons, the product to be exported to Great Britain and Germany, and if found profitable to the United States. Mr. Julius Spiro is a member of the firm of Messrs. J. Spiro and Sons, of Kruman, Austria, and in the Canadian enterprise he is associated with Mr. Arthur H. Hilyard, of St. John and New York, and (according to an advice from the States) a London banker. It is the intention of the promoters to construct wharfs, etc., so that vessels can load at the mill. The estimated cost of the plant is 450,000 dols.

Stocks and Shares.

Several important changes have during the week been noticeable in the Paper share market. East Lancashire continue to be in good demand, and the ord. show a rise of $\frac{3}{8}$, the pref. $\frac{1}{4}$, and bonus $\frac{1}{4}$, on the week, and few shares are offered. Among others, Peebles show a rise of $\frac{1}{2}$ after being depressed for some weeks, and the pref. are also $\frac{1}{4}$ higher. Burnley are $\frac{1}{8}$ advanced and no sellers. Collins also are 3s. better. Star Paper prefs. are enquired for at an advance of $\frac{1}{4}$, but the ord. are $\frac{1}{8}$ easier. Roach Bridge have paid their 10 per cent. dividend, and North of Ireland 12½ per cent., and are now quoted x.d.

In Chemical shares, Brunner-Mond ord. are $\frac{1}{2}$ higher, and "new" $\frac{1}{2}$ also. F. Steiner are somewhat easier at $\frac{1}{4}$ decline. United Alkali are irregular, the ord. showing $\frac{1}{16}$ of a loss, and debs. of 1½, whilst the pref. are $\frac{1}{8}$ higher. Steady markets.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
5	5	Hyde Paper Works Co. (Ld.)	nil	1½—2
10	10	Bath Paper Mill Co. ,,	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	103—105
0	10	do. do. 6% pref.	6	12—13
3¾	5	Burnley Paper Co. (Ld.)	10	6—6½
7	7	Bury Paper, ord. ,,	6	6½—6¾
7	7	do. 6% pref. ,,	6	7¼—7½
2½	3	Collin (Darwen) Paper ,,	nil	4/6—5/5
3½	5	Darwen Paper Co. ,,	15	7½—8½ c.d.
10	10	E. Lancashire Paper Co. ,,	nil	5¾—6¼
10	10	do. do. 6% pref. ,,	nil	6¼—6¾
5	5	do. do. bonus	nil	1½—2½
4	5	Hartlepool Pulp & Paper ,,	10	7¾—7⅞
2½	5	Kelln'r-Part'gt'n P'p Co ,,	15	7⅛—8
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7½—7⅝ x.d.
7	10	Olive Brothers ,,	10	7⅛—7⅜
5	5	Peebles (A. M.) & Son ,,	8	8—8½
5	5	do. 5% cum. pref.	5	6⅜—6⅝
100	Stock	do. 4½% deb. issued 105	4½	111½—112½
3	5	Ramsbottom Paper Co. ,,	10	7—7½ c.d.
1	1	do. do. cum. pref.	5	1⅜—1⅝ c.d.
4½	5	Roach Bridge Paper Co. ,,	10	5—5½ x.d.
5	5	Star Paper Co.	10	7⅜—7⅝
3	5	do. do. cum. pref.	10	6½—6¾
100	100	Thomas Owen and Co. deb. (repayable on notice at 110)	5	114—115
1	1	do. do. 6% pref.	6	27/—27/6
1	1	do. do. ord.	12½	2—2¼
10	10	Waterlow & Sons non.-cum. def.	12	15¼—15⅜
		do. do. non.-cum. pref.		15¼—15⅜
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	8¼—8½
10	10	do. do. cum. pref.	7	11¼—11½
100	100	do. do. debs. (red. 1904)	6	104—100
10	10	Brunner, Mond & Co. (Ld.)	20	41—42
3½	10	do. do. "New" ,,	20	16¾—17⅛
10	10	do. do. 7% pref. ,,	7	18—18¼
5	10	do. do. do. new issue	7	8¼—8½
1	1	Castner-Kellner Co. ,,	—	22/—27/6
5	5	Clayton Aniline cum. pref.	6	5⅞—6⅛
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11¼—11¾
100	Stock	do. do. deb. stock (red. 1912)	4	105—106
10	10	United Alkali Co. ,,	2	2⅛—2¼
10	10	do. do. cum. pref. ,,	7	9⅛—9⅜
100	Stock	do. mort. deb. (red. after 1901)	5	110¼—110¾

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SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries.

OFFICES—58, SHOE LANE, LONDON, E.C.

Situation Vacant.

TRAVELLER Wanted by a firm of paper agents. Must be well up in foreign papers, and have a good connection amongst wholesale trade.—Address, No. 7,196, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7196

Situations Wanted.

ADVERTISER (28), with about 10 years' experience in makers' and agents' London offices, seeks agency, or London engagement where industry, conscientiousness, and business aptitude, would meet with a reasonable reward.—Address, No. 7,181, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7181

BEATERMAN in Mill making Browns, small hands, middies, etc.; age 32; 6 years last situation; good reference.—"F.," Ashton-villas, Wycombe-road, Gt. Marlow. 7200

WANTED.—Situation as Manager or Foreman; used to writings, printings, news, etc.; 14 years in last mill; good references.—Address, No. 7,123, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe Lane, London, E.C. 7187

Machinery.

FOR SALE, 4 cast-iron calender rolls, 80-in. wide, 14-in. diameter, with blocks and frames.—Address, No. 7,118, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7118

FOURDRINIER Papermaking Machine, must be strong, modern, and in good order; 80 to 106 inches of paper. Fair price for a good machine.—Address, K., No. 7,202, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C.

WANTED, Second-hand Paper Bag Making Machinery, either Burgsted or Bibby and Baron's makes.—Address, No. 7,197, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7197

3 CWT. BEATER Wanted, in good condition. Price and full particulars to Thomas and Green, Limited, Soho Mills, Wooburn Bucks. 7198

Miscellaneous.

CAPITAL at 5 per cent. per annum can be obtained by established firms.—"Bank," care of Emmison's Advertising Offices, Manchester. 6943

FOR SALE.—Copies of the *World's Paper Trade Review*, from July 1st, 1894, to June 30th, 1895; handsomely bound in 2 vols., half-calf, with cloth sides and gilt lettered on back; condition as new; 10s. the two; a bargain. Also copies of vol. 2 of the *British and Colonial Printer and Stationer*, July to December, 1879, bound; 2s. 6d. each to clear, binding costs more. Contains the first six Nos. of the *Paper Trade Review*.—Address, No. 10865, office of the BRITISH AND COLONIAL PRINTER AND STATIONER, 58, Shoe-lane, London, E.C. 10865

PARTNERSHIP.—Wanted, by experienced and energetic papermaker, Partnership in sound concern, or responsible position with a view to same.—Address, No. 7,195, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7,195

TO BE LET or SOLD cheap, Freehold Paper Mill in the West of England, alongside deep water quay, with cheap carriage by steamer or rail; water power and steam. To be disposed of on account of owner's health.—Address, No. 7,180, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7180

WANTED, a few tons cheap Fancy Paper, suitable for bottle wrapping. Salvage stock if possible.—Address, "Paper," c/o Lee and Nightingale, Advertising Agents, Liverpool. 7201

Directory of German Papermakers,

WHOLESALE STATIONERS,

BOOKBINDERS,

FANCY TRADES, &C

The States of the German Empire, Provinces, Towns, and Firms, are alphabetically arranged, and the specialties of firms classified.

(In the German Language).

Price 9s.

(Foreign postage extra)

To be obtained of W. JOHN STONHILL, 58, Shoe Lane London, E.C.

CELLULOSE-DIRECTOR UND WERKFUEHRER.

ZUR LEITUNG EINER CELLULOSEFABRIK wird eine erste Kraft als Director und ein zuverlaessiger, fachmaennisch ausgebildeter Werkfuehrer zu engagiren gesucht. Genaue Angaben der bisherigen Thaetigkeit und des Systems, nach welchem bisher gearbeitet, erforderlich. Gesichertes Einkommen und angenehme Position wird garantirt. Nur la Bewerber, welche eine erfolgreiche Thaetigkeit bereits nachweisen koennen, finden Beruecksichtigung. Discretion wird zugesichert.

Offerten unter "J.K.," 7326 befoerdert Rudolf Mosse, Berlin, S.W. 3106

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SALE BY AUCTION.

UNION PAPER MILL,

DEWSBURY ROAD, LEEDS.

Highly Important Piecemeal Sale of Modern Papermaking Plant, Machinery, Stock-in-Trade and Effects.

Edward Rushton, Son and Kenyon

are honoured with instructions from H. E. Rawson, Esq., to catalogue and

SELL BY AUCTION,

IN DETAIL,

On WEDNESDAY, February 16th, 1898,

ON THE PREMISES AS ABOVE.

The Whole of the VALUABLE MODERN

PAPERMAKING PLANT, MACHINERY AND EFFECTS

therein (the greater portion having been put down new since 1892), including:—First-class 72-inch Papermaking Machine, complete, by James Park, Bury; Nuttall's patent Rag Chopper, new 1895; one spherical and two horizontal Revolving Rag Boilers, by Horsfield, Dewsbury, new 1893; two Hibbert's patent Rag Engines, new 1893; three ordinary Rag Engines, by Shorrock; several single and double-acting Pumps; horizontal and vertical Donkey Steam Engines; very fine horizontal Compound Tandem Steam Engine, 21-in. and 36-in. cylinders, 4-ft. 6-in. stroke, with belt pulley, 18-ft. dia., 4-ft. face, by Musgraves, Bolton; two first-class 3-bowl calenders, 58-in. wide; 72-in. Paper Cutting Machine; Furnival's Express Guillotine, 42-in. wide; several cast and wrought iron Cistern and Pans, some with Agitators; Green's Fuel Economisers, 120 Pipes, new 1894; ranges of Shafting and Piping, rubber, camel-hair, and leather Belting, Office Furniture, Milner's Safe, about 30 tons Manufactured Paper and Feltine, and other Stock-in-trade and Effects.

Sale to commence at Eleven a.m.

On View any day one week prior to sale during working hours.

Descriptive Catalogues may be had (gratis) from the Auctioneers, 13, Norfolk-street, Manchester, or from Mr. J. J. Mosley, Estate Agent, 6, Wormald-row, Albion-street, Leeds. 3108

NEW PATENTS.

APPLICATIONS.

678.—Method of diminishing the affinity of electrolytically produced chlorine. C. A. Jensen.

682.—Improved method of and means for the separation of china clay from the other constituents of decomposed felspar. E. H. Hilton and J. B. Goodman.

847.—Improvements in apparatus for straining paper pulp. W. W. Beaumont.

881.—Improved process for the manufacture of chemically prepared peat fibres. C. Greige.

972.—Improvements in bleaching and purifying paper pulp. J. Tait.

1028.—Improvements in the manufacture and production of a material in film, sheet or web form. C. H. Stearn.

1211.—Improvements relating to dandy rolls. C. D. Marshall.

1342.—Improvements in the manufacture and finishing of paper machine wire cloth and dressing machine wire cloth and in the machinery and appliances connected therewith. T. E. Rigby.

1749.—Improvements in the method of damping paper during the process of manufacture and its apparatus for effecting the same. J. Hargreaves and M. Duxbury.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

1896.

29,727.—Process of treating china grass and other fibres, and apparatus therefor. Lane.

29,767.—Machine for dusting and cleaning wool waste, rags and the like. Tolson.

A FIRM OF BJØRNEBORG, FINLAND,

Exporters of

SAWN WOOD & PULP WOOD,

with large pulp wood forests of its own, able to deliver up to 10,000 fathoms a year from deep and safe harbour of its own, wishes to enter into direct and special arrangements with First-class Buyer.

Personal visit here in order to settle business desirable.

Reply to— 3103

"WOOD," BJØRNEBORG, FINLAND.

Papermakers' Supplies

EXPORTER. 3104

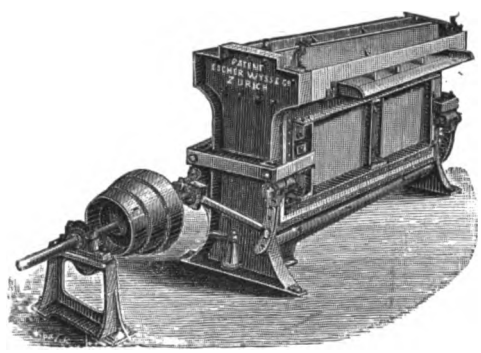
ROSENDO GIRALT,

52, Villarroel, Barcelona, Spain.

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

OVER 100 AT WORK.

FACTS SPEAK FOR THEMSELVES—

The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES—

SUPERIOR to any other System for its Numerous Advantages as:

Large Production with any kind of Pulp.
No Stoppage for Cleaning.
Most Regular and Quite Noiseless Working
Little room taken up on the Machine, &c.

AGENT—

ALPH. STEIGER C.E.

16, MINCING LANE, LONDON, E.C.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester, Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams.

Telegrams—"STONHILL, LONDON."

CHEMICALS.—The market keeps quiet; prices are fairly firm. BLEACHING POWDER is without change at £5 5s. to £5 10s. for soft wood, and £6 to £6 5s. for hard wood f.o.b. Liverpool. CAUSTIC SODA, 77 per cent. is quoted £8 12s. 6d. ALKALI is firm, without change in price. SODA CRYSTALS are scarce at £2 17s. 6d. per ton on rails. ALUM quiet. RECOVERED SULPHUR stands at £4 10s. to £5 per ton on rails in bags.

Alum (Ground), tierces	...	f.o.b. Liverpool	24/	5	5 9
,, ,, barrels	...	,, ,,	24/6	5	15 0
,, ,, tierces	...	,, Hull	24/6	5	2 0
,, ,, ,,	...	Goole	24/6	5	2 6
,, ,,	...	f.o.b. Glasgow	24/6	5	2 6
Alum Lump) ,,	...	f.o.b. Liverpool	24/6	4	12 6
,, barrels	...	,, ,,	24/6	4	15 0
,, ,, tierces	...	,, Hull	24/6	4	12 6
,, ,, ,,	...	Goole	24/6	4	12 6
,, ,, ,,	...	London	24/6	5	2 6
,, ,, ,,	...	f.a.s. Glasgow	24/6	4	17 6
Alumina Sulphate	...	f.o.b. Tyne	net	3	11 3
Aluminoferric Cake, slabs		Liverpool ...	...	2	15 0
,, ,, tierces		,, ...	...	3	2 6
Alugina Cake, ... slabs		Glasgow ...	...	2	10 0
Blanc Fixe ...	...	f.o.b. Tyne	net	6	17 6
Bleach,	...	,, ,,	net	6	0 0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5 0
,, (hard wood)	...	f.o.b. Liverpool	net	6	0 0
,, (soft wood)	...	landed London	net	6	12 6
Borax (crystals) ...	...	... ...	net	14	10 0
,, powdered ...	...	... ...	net	15	0 0
Chlorids of Barium	...	f.o.b. Tyne	net	6	15 0
Caustic White 76%	...	f.o.b. Liverpool	net	8	15 0
,, 74%	...	,, ,,	net	8	10 0
,, 70%	...	,, ,,	net	7	10 0
,, 70%	...	f.o.r. Lancs.,	net	7	7 6
,, 60%	...	f.o.b. Liverpool	net	6	10 0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5	15 0
,, 60%	...	f.o.b. Liverpool	net	5	17 6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4	6 0
Soda Ash, Carbonated 48%		f.o.b. Liverpool	net	4	17 6
,, ,, 48%		,,	net	4	12 6
,, ,, 58%		f.o.r. Widnes	net	4	15 0
,, ,, 48%		,, ,,	net	4	10 0
Ammonia 58%		f.o.b. Liverpool		4	5 0
,, 48%		,,		4	0 0
Caustic 48%		,,		4	17 6
,, 58%		,,		5	2 6
Hypo Sulphite of Soda		f.o.b Tyne 10 ton lots		4	15 0
,, ton lots		ex ship Liverp'l	net	5	5 0
[illegible]		f.o.b. Liverpool	34%	per lb	0
[illegible]		on rail in bulk		2	2 0
[illegible]		f.o.b Liverpool		35	0 0
[illegible]		,,		33	0 0
[illegible]		f.o.b. Tyne	net	8	15 0
		ex ship Thames	24%	8	15 0
		f.o.b. Liverpool	5%	8	17 3
		f.o.r. works	24%	6	5 0
		,, ,,	24%	7	5 0
		,, ,,	24%	8	0 0
		,, ,,	24%	10	0 0
		,, Liverpool	5%	16	10 0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	5	0 0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15 0
Blanc Fixe (c.i.f. London)		7	0 0
White Sugar of Lead		24	0 0
Zinc Oxide		28	5 0
Bleaching Powder		5	15 0

ESPARTO.—The low quotations now current for African esparto have at length stimulated the demand and a very active enquiry prevails for distant delivery—extending so far as to cover all 1899. Spanish of new crop also beginning to be asked for, but quotations are not yet determined. Early shipment likewise wanted but there is little available, although higher prices would be paid for suitable parcels.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—Fair to Good	... ...	£4	10	0	to 4	17	6
,, Fine to Best	... ...	5	5	0	,, 5	10	0
Oran— Fair to Good	... ...	2	17	6	,, 3	0	0
,, First Quality	... ...	3	1	3	,, 3	2	6
Tripoli—Hand-picked	... ...	2	18	9	,, 3	1	3
,, Fair Average	... ...	2	15	0	,, 2	16	3
Bona & Philippeville	... ...	3	3	9	,, 3	6	9

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
522 tons	Aguilas	H. Ottomann	Granton
75 ,,	Alicante	Morris and Co	,,
733 ,,	Almeria	,,	London
1440 bales	Gabes		Liverpool
3339 ,,	Skira		,,

CHEMICAL WOOD PULPS.—Business is rather quiet. The Scandinavians do not relish the idea of making any reduction in quotations, but as offers of SULPHITE have lately been made to British buyers at £8 10s. to £8 15s. they stand out against paying the rates asked for by Norwegian and Swedish makers. Prices of SODA pulps are well maintained.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common		£8	12	6	to 9	0	0
,, Superior ,, ...		9	5	0	,, 9	10	0
,, Bleached, ...		11	10	0	,, 15	0	0
SODA, Unbleached, Common ...		8	5	0	,, 8	10	0
,, Extra...		8	15	0	,, 9	5	0
,, Bleached		10	10	0	,, 12	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.25 to 25.		
,, Bleached	31.	,, 36	
SODA, Unbleached	21.	,, 24.	
,, Bleached	28.	,, 30.	
SULPHATE, Unbleached	21.	,, 24.	
,, Bleached	28.	,, 30.	

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached ...	1.62 to 2		
,, SODA Bleached ...	1.70	2	
FOREIGN SODA, Unbleached	2.15	2.10	
,, Bleached	2.70	2.80c.	
,, SULPHITE, Unbleached ...	2.30	,, 2.75c.	
,, ,, Bleached... ...	3.25	,, 3.30c.	

MECHANICAL WOOD PULPS.—The market for Mechanical is dull. There are more offers on the market from Scandinavian manufacturers, who evidently recognise the growing importation of Canadian and American pulps as they are now prepared to make reductions on former quotations. Current rates are £2 2s. 6d. for Moist and £4 5s. for Dry, but papermakers anticipate still lower prices, and consequently business is difficult to carry through.

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BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen,	Dry	£6 10	0
Pine,	Dry	£4 5 0 to 4 15	0
,,	Moist	2 2 6 ,, 2 10	0
Brown,	Dry	4 15	0
,,	Moist	2 10	0

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt

Pine Pulp, 50% moisture, ordinary ...	Frs. 12.50 to 13.
,, ,, fine ...	13. ,, 13.50
,, dry, ordinary	11.50 ,, 12.
,, ,, fine	12.50 ,, 13.
Aspen, ,, ,, ...	16. ,, 18.
Half-Chemical Brown, 50% moisture	12.50 ,, 13.
,, ,, dry ...	12 50 ,, 13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
200 bales	Gothenburg		London
695 ,,	Halifax		,,
6641 ,,	,,	Wertheim and Co	,,
40 cases	Drammen	G. F. Green	,,
10 ,,	,,	F. E. Foulger	,,
10 ,,	,,	Bott and Co	,,
400 bales	,,	A. H. Keep	,,
200 ,,	,,	E. & W. Goldsmith	,,
812 ,,	Moss	W. G. Taylor & Co	,,
80 ,,	Fredrikstadt	Becker & Co	,,
560 ,,	,,	Christophersen & Co	,,
1616 ,,	,,	J. Sharp	,,
480 ,,	Rotterdam		,,
30 ,,	Hambro		,,
27 ,,	Gothenburg	Green and Co	,,
160 ,,	,,	Taylor and Co	,,
20 ,,	,,	R. L. Castleman	,,
98 ,,	,,		,,
130 ,,	Rotterdam		,,
4518 ,,	Halifax		Liverpool
309 ,,	Rotterdam		,,
2721 rolls	Boston		,,
40 bales	Ghent		,,
352 ,,	Gothenburg		Hull
1082 ,,	Christiania		,,
1820 ,,	Drontheim		,,
145 ,,	Bergen		,,
68 ,,	Hango		,,
3940 ,,	Gothenburg		Manchester
4409 ,,	Drammen		,,
1676 ,,	Sarpsborg		,,
4255 ,,	Porsgrund		,,
127 ,,	Fredrikstadt		,,
10 ,,	Ghent		,,
2800 ,,	Stockholm		,,
1200 ,,	Oxelosund		,,
1896 ,,	Sarpsborg		,,
513 rolls	Philadelphia		Glasgow
51 bales	Rotterdam		Goole
1015 ,,	Hamburg		Grangemouth
1898 ,,	Christiania		,,
1774 ,,	,,		,,
316 ,,	Gothenburg		Granton
153 ,,	Rotterdam		Dundee
400 ,,	Helsingborg		Grimsby

Totals of Wood Pulp from Each Country:

BELGIUM ...	50 bales	NORWAY ...	21454 bales
CANADA ...	11854 ,,	,, ...	60 cases
FINLAND ...	68 ,,	SWEDEN ...	11409 bales
GERMANY ...	1045 ,,	U.S.A.	3234 rolls
HOLLAND ...	1123 ,,		

STRAW.—Prices:

Oat Straw, ...	c.i.f. London	42/0;	f.o.r. Goole,	42/0
Wheat ,, ...	do.	44/0;	do.	40/0
Rye ,, ...	do.	57/6;	do	57/0

STRAW PULPS.—There is a better enquiry; prices firm.

Prices, c.i.f. London, Hull or Leith

German, dry, No. 1	£14 0 0
,, No. 2	£13 0 0

FOREIGN RAGS. — The demand for French rags is very active, and large arrivals have come to hand of late. There is a steady demand for German rags. The British imports during the week were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
7	Bremen	Hull	44	Ghent	Goole
29	Amsterdam	,,	163	Boulogne	,,
155	Ghent	,,	9	Hambro	,,
29	Harlingen	,,	25	Amsterdam	,,
290	Copenhagen	,,	31	Antwerp	,,
39	Stettin	,,	112	Ghent	,,
71	Amsterdam	,,	217	Boulogne	,,
199	Bordeaux	,,	46	Hambro	Grimsby
28	Rotterdam	,,	23	Rotterdam	,,
230	Konigsberg	,,	254	Dieppe	,,
321	Rouen	,,	16	Rotterdam	,,
81	Hambro	,,	311	Dieppe	,,
18	,,	,,	106	Rotterdam	,,
48	Rotterdam	,,	60	Ghent	Leith
106	Bremen	,,	25	Calais	,,
13	Hambro	,,	36	Hambro	,,
59	Harlingen	,,	45	Dunkirk	,,
41	Amsterdam	,,	6	Hambro	,,
3	Bremen	,,	1109	Rotterdam	,,
124	Rouen	London	85	Amsterdam	,,
47	Cologne	,,	16	Jersey Southampton	
14	Stettin	,,	17	Cherbourg	,,
47	Calais	,,	108	Antwerp	Bristol
23	Dunkirk	,,	40	Rotterdam	,,
20	Amsterdam	,,	47	Naples	Liverpool
36	Fernuzen	,,	13	Constantinople	,,
30	Gothenburg	,,	6	Hambro	Manchester
23	Ghent	,,	35	St. Nazaire	Newhvn
47	Hambro	Goole	114	,,	,,
69	Ghent	,,	63	Caen	,,
33	Antwerp	,,	6	Dieppe	,,
60	Hamburg	,,	6	,,	,,
22	Amsterdam	,,	174	St. Nazaire	,,
40	Rotterdam	,,	34	,,	,,
10	Boulogne	,,			

Totals from Each Country:

BELGIUM ...	632 bales	HOLLAND ...	1827 bales
CHANNEL Isles	16 ,,	ITALY ...	47 ,,
DENMARK ...	290 ,,	PRUSSIA ...	230 ,,
FRANCE ...	2189 ,,	SWEDEN ...	30 ,,
GERMANY ...	538 ,,	TURKEY ...	13 ,,

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7
Mxd Hemp Rope coils)	8/0	Not ree from wood	5

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	12/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No 1 6/0; No. II	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	8/0
SPF	11/0	CSPFFF	14/0
FF	8/0	CSPFF	10/0
FG	8/6	CFB (Blue)	6/0
FFX	7/0	CFX (Coloured) ...	4/0

FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchette Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Blue Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ..	3/6	,, Stay ,,	15/0

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PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/o	CC (Cotton)	4/c
SPF	12/6	Jute I	3/o
FG	10/o	,, II	2/o
LFB	8/o	Rope I	8/6
FF	5/6	,, II	6/c

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/o; Hull and Goole, 12/6; Liverpool and Leith, 10/o; Newcastle, 12/6; Dundee and Aberdeen, 15/o; Glasgow, 16/8.

White Linens No. 1	21/o	Fustians (Light	4/o
,, ,, No. 2	16/o	,, (Dark)	3/o
,, ,, No. 3	12/o	Black Cottons	3/o
Fines (Mixed)	12/o	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths	2/9
,, ,, (extra)	14/o	Old Bagging (solid	3/o
Blue Linens	8/o	,, ,, (common	2/6
White Cottons S'p'fine	18/o	NEW.	
,, ,, No. 2	15/o	White & Cream Lines	35/o
Outshots No. 3	10/o	White Cuttings	22/o
Seconds No. 4	8/o	Unbleached Cuttings	21/o
Prints (Light	8/6	Print Cuttings	8/o

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/o; Fair ditto 8/o
Flax Card Waste 6/o
Hemp Waste, No. 1 8/o; No. 2 ... ... 3/o

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred)	8/3-9/o	2nd Canvas	7/o
2nd ,, ,,	5/6-6/o	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny	3/6-5/o
Best Canvas	11/o-12/o	Mixed	2/6-2/o

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*	2/6	Sail Cloth or Canvas	5/o
2nd ,, ,,	2/6	Rope, Thick	6
Blue Cottons	1/3	,, Small	4/6
Coloured ,,	1/3		

*At Smyrna and Salonica.

HOME RAGS.—LONDON: Trade quiet; prices unaltered.—BRISTOL: The market is firm, with a good demand for all grades. Stocks move off as collected.—MANCHESTER: Market steady.—EDINBURGH and GLASGOW: Fair enquiry; prices without change.

LONDON

N. White Cuttings	18/o-22/o	Canvas No. 1	14/o-15/o
Fines (selected)	19/6-21/o	,, No. 2	9/6-10/o
,, (good London)	17/o-17/6	,, No. 3	5/o
Outshots (selected)	11/o	Mixed Rope	3/o-4/o
,, (ordinary)	9/o	White Rope	3/6-5/o
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/o
Country do.	4/o-6/6	Coil Rope	9/6
London Thirds	1/3	Bagging	1/3-1/9
Country do.	2/o	Gunny	2/o-2/3

BRISTOL:

Fines	16/o	Clean Canvas	14/o
Outshots	9/6	Second Do.	9/6-10/6
Seconds	5/o	Light Prints	6/o
Thirds	2/6	Hemp Coil Rope	9/6-10/o
Mixed Bagging	2/6	Tarred Manilla	6/o

MANCHESTER:

Fines	14/o-15/o	Blues	4/3-4/6
Outshots (best)	9/6	Bagging	2/6-3/o
,, (ordinary)	8/6	,, (common)	2/o-2/3
Seconds	4/6-5/o	W. Manilla Rope	7/o-7/6
Thirds	2/o-2/6	Surat Tares	2g/-3/o

EDINBURGH:

Superfines	15/o	Black Cottons	2/6
Outshots	12/o	W. Manilla Rope	7/o
Mixed Fines	14/o	Tarred Manilla Rope	5/9
Common Seconds	7/o	,, Hemp Rope	8/o
First do.	10/o	Rope Ends (new)	6/o
Prints	5/o	,, ,, (old)	4/o
Canvas (best)	15/o	Bagging	2/3
2nd	8/	,, (clean)	3/o-4/o

GLASGOW.

Fines	12/6-16/o	Canva No. 1.	15/o
Blues	4/6	,, No. 2.	10/o
Common Blues	3/3	Manilla Rope	8/o
Bagging	4/o	Tarred Hemp	9/o

DUBLIN.

White Cuttings	16/o	Mill Bagging	/o
Fines	9/o	White Manilla	6/9
Seconds	3/6	Tarred Hemp	6/o
Light Prints	2/6	Rigging	10/o
Black do.	1/6	Mixed Ropes	

WASTE PAPERS.—Trade steady.

Cream Shavings	10/o	Small Letters	3/o
Fine ,,	8/o	Large ,,	4/o
Mixed ,,	2/6	Brown Paper	2/3
White Printings	7/o	Light Browns	3/o
White Waste	1/9	Dark ,,	2/o
Wood Pulp Cuttings	3/o	Books & Pamphlets	3/6
Blue Paper	2/o	Strawboard Cuttings	1/3
Crushed News	2/o	Jacquards	2/o

For Export: 2s/- per ton extra.

JUTE.—Prices:

Good Wht	£15 o to £16 10	Common	£7 10 to £9 o
Good	£13 o to £14 10	Rejections	£6 10 to £8 10
Medium	£10 o to £12 10	Cuttings	£3 o to £4 o

STARCH.—The report that Powdered Maize Starch was being offered at under £4 c.i.f Liverpool appears, upon enquiries we have made, to be inaccurate. The price has not been below £5 5s. or £5 2s. 6d., and the present price is about £6 10s. to £6 15s.

F.o.r. London, less 2½%

Maize—Crisp, £10 o/-; Pearl, £6 5/-; Powder, £6 15/-
Special £14.
Farina—Prime, £10; B.K.M.F., £13 10/-.
Delivered, less 2½%:
Rice—Special (in chests), £20 o/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.
Dextrine—£15

SIZING.—Market firm.

English Gelatines per cwt.		90/o	to 120/o
Foreign ,,		70/o	,, 100/o
Fine Scotch Glues		45/o	,, 60/o
Long Scotch Glues		35/o	,, 40/o
Common Black ,,		25/o	,, 28/o
"Town" Glues		38/o	,, 45/o
"Bone" Glues		26/o	,, 30/o
Foreign Glues		28/o	,, 35/o
Bone Size		5/6	,, 10/o
Gelatine Size		6/6	,, 20/o
Dry B A. Pieces		50/o	,, 55/o
,, English Pieces		35/o	,, 45/o
Wet ,, ,,		8/6	,, 9/o
,, Sheep Pieces		3/o	,, 4/o
Buffalo Hide Shavings		32/o	,, 40/o
,, Picker Waste		32/o	,, 35/o

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4/9	5/-	5/3	5/4½	5/6	6/-	6/3	6/9	7/-	8/-	9/-

COLOURS.—Enquiry.

Mineral Black	cwt. 3/6	PASTE COLOURS with	
do. superior	,, 4/o	60% of colour, as follows	
Pure Ivory Black	,, 12/o	Orange Pulp	cwt. 40/o
Ochre	,, 2/3	Golden Yellow Pulp	30/o
French J. C. Ochre	ton 60/o	Lemon ,,	,, cwt. 30/o
Chrome (pure)	cwt. 40/o	Prussian Yellow	,, 36/o
Red Oxide	,, 4/6	Green (free of arsenic	26/o
Umber, Devonshire	,, 50/o	Paste Blue, 20%	18/o
do. Turkish	,, 40/o	,, 33⅓; 26/o; 45%	45/o
Lamp Black	,, 5/o-7/6	Imperial Yellow (dry)	16/o
Ultramarine (pure)	35/o-45/o	(less 2½ d/d)	
Cochineal	lb. 4/9-2/o		

METALS.—LONDON: COPPER firm; TIN steady; LEAD quiet. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	49	3	9	49	8	9
,, three months	49	10	0	49	15	0
Tough	51	7	6	51	12	6
Best selected	52	7	6	52	17	6
Strong Sheets	59	0	0			
TIN—						
Fine foreign, cash	63	2	6	63	12	6
,, three months	63	13	9	64	3	9
LEAD—						
Spanish	12	7	6	12	8	9
English	12	10	0	12	12	6

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MINERALS.—There is not much movement in CHINA CLAY, particularly in the lower qualities. Shipments are slow and complaints are made of the high rates of freights. FRENCH CHALK is in moderate request. There is a steady demand for MINERAL WHITE, BARYTES and SNOWDRIFT.

Mineral White (also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine	28/0	less 2½ % ; del. Lancashire ...			38/0
Pottery Super.	24/0	,,	,,	... ...	34/0
Ball Seconds ...	20/0	,,	,,	... ...	30/
Seconds	15/0	,,	,,	... ...	25/0
Thirds	11/0	,,	,,	... ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/0 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 42/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 47/- to 52/6.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 66/0, 73/6, 77/6 and 92/6 per ton, according to quality, less 2½ %.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool, I.W.A., "Portland Mills," and "Swan" marks, £4 15/- to £6 0/- per ton of 12 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-,

Patent Hardening (2 ton lots) f.o.r. Lancs., £3 5/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £6 0/0; calcined, £11.

Magnesite (in lump) 39/6 to 46/0 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, 35/- to 68/- per ton, according to quality.

Bauxite, minimum alumina, 60 %, 15/9 f.o.b.

Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.

Satinite, £3 to £3 6s. 0d., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/6 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0 to £13 15/- del.

LIME.—The present price is 10/6 per ton f.o.r

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

W. FRIEDLAENDER,

60, Fenchurch Street,

Telegrams: "LANDFRIED—LONDON." LONDON, E.C.

Sulphite, Sulphate & Soda Pulps.

BLEACHED & UNBLEACHED,

IN PURE STRONG FELTY QUALITIES.

JAMES KENYON and SON,

DERBY STREET MILLS,
BURY, LANCASHIRE.

ALL FELTS for Papermakers.

Telegrams: "KENYON, BURY."

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales	Cases	Rolls
AUSTRIA	[illegible]	—	—
BELGIUM	[illegible]	—	—
DENMARK	6	—	—
FRANCE	35	[illegible]	—
FINLAND	[illegible]	—	—
GERMANY	[illegible]	[illegible]	[illegible]
HOLLAND	[illegible]	8	—
JAPAN	—	[illegible]	—
NORWAY	[illegible]	—	—
PORTUGAL	—	1	—
SWEDEN	[illegible]	—	—
U.S.A.	[illegible]	4	[illegible]

Including the Following:—

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	[illegible]	[illegible]	814
AFRICA	[illegible]	[illegible]	41
B. W. INDIES	75	—	—
BRAZIL	—	17	—
BELGIUM	[illegible]	85	11
CAPE COLONY	[illegible]	[illegible]	[illegible]
CANADA	—	[illegible]	—
CHINA	[illegible]	53	[illegible]
CHANNEL ISLES	—	—	14
EGYPT	—	—	[illegible]
FRANCE	[illegible]	[illegible]	13
GIBRALTAR	—	5	—
GERMANY	—	75	6
GREECE	—	8	—
HOLLAND	—	21	37
INDIA	[illegible]	[illegible]	[illegible]
JAPAN	[illegible]	[illegible]	—
MALTA	—	—	[illegible]
MAURITIUS	—	9	[illegible]
[illegible]	[illegible]	—	—
NEW ZEALAND	[illegible]	[illegible]	[illegible]
PORTUGAL	[illegible]	—	1
SPAIN	—	9	[illegible]
SWEDEN	—	1	—
[illegible]	—	[illegible]	—
S. SETTLEMENTS	—	[illegible]	[illegible]
S. AMERICA	—	—	[illegible]
U.S.A.	[illegible]	[illegible]	8
[illegible]	—	[illegible]	—

FROM GLASGOW.

	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	[illegible]	[illegible]	—
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	—
[illegible]	—	8	[illegible]
[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	[illegible]
[illegible]	[illegible]	—	—
[illegible]	—	—	[illegible]
[illegible]	—	—	[illegible]
[illegible]	[illegible]	—	—

PRUSSIAN BLUE

Aniline

Company.

LONDON, E.C.

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A. WERTHEIM & Co.,

HAMBURG,

SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden) .. .	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 35.
LYONS	Rue Montesquieu 9.
MILAN	Via Prine Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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AMERICAN IMPORTS OF Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
25 cases	Antwerp	Scovill and Adams	New York
20 ..	..	J. W. Hampton	..
25 ..	..	Stinet and Co	..
25 ..	..	Sheldon and Co	..
25 ..	..	Knauth, Nachod & Co	..
1 ..	..	Wadsworth, Howland	..
1 ..	..	R. D. Webber	..
20 ..	Bordeaux	C. J. Molloy	..
2 ..	Bremen	Wicke and Co	..
2 ..	Hamburg	Meyer and Co	..
2 ..	..	Lindermeyr and Sons	..
2 ..	..	A. Kraut	..
46 ..	Havre	American Tobacco Co	..
21 ..	..	Druckteil and Co	..
3 ..	..	L. Maier	..
10 ..	..	Sheldon and Co	..
6 ..	Liverpool	B. and O. Meyer	..

MANILLAS.

272 bales	Calcutta	Ball Bros	New York
118 ..	Hamburg	Train, Smith, & Co	Boston
11 ..	London	Butterworth and Co	..
97 ..	Liverpool	..	..

RAGS.

748 bales	Antwerp	A. Kazenstein	New York
91 ..	..	Salomon Bros	..
780 ..	..	Train, Smith & Co	Boston
47 ..	..	Butterworth and Co	..
481 ..	..	Castle and Gotheil	..
300 ..	..	Spaulding Bros	..
90 ..	Hamburg	Train, Smith and Co	..
112 ..	..	Salomon and Co	New York
524 ..	Genoa	Lender	Philadelphia
835 ..	Hong	Arlz & Co	New York
4 ..	Hull	Tibbuns and Co	..
225 ..	Leith	Arlz & Co	..
26 ..	Leghorn	Jessup & Moore	..
2 ..	Liverpool	Lee Bros	..
26 ..	..	A. Katzenstein	..
3 ..	..	Train, Smith & Co	Boston
98 ..	..	Butterworth and Co	..
457 ..	Marseilles	Lender	Philadelphia

WASTE PAPERS.

30 bales	Antwerp	Crooker, Burbank	Boston
24 ..	Glasgow	Train, Smith & Co	New York
277 ..	..	Dorrestad and Seidl	..
84 ..	Liverpool	Lee Bros	..
20 ..	London	Castle and Gotheil	..
7 ..	..	Train, Smith and Co	..
50 ..	..	..	Boston
75 ..	..	Crooker, Burbank & Co	..
5 ..	..	Wadsworth, Howland Co	..
45 ..	..	Castle and Gotheil	..

BLEACHING POWDER.

200 casks	Antwerp	Kidder Peabody and Co	New York
1 ..	..	Lee Bros	..
50 ..	..	Crooker and Co	Boston
712 ..	..	Lee Bros	Philadelphia
6 ..	..	Lee Bros	..
1,000 ..	Harlingen	Rossiter & Hasslacher	Boston
50 ..	..	..	New York
25 ..	Liverpool	J. L. & D. S. Riker	..
250 ..	..	..	Boston
1 ..	..	Wadsworth, Howland Co	..
1 ..	..	Kidder Peabody and Co	New York
5 ..	..	Rossiter & Hasslacher	New York

CAUSTIC SODA.

200 drums	Liverpool	Chemical Co	New York
50 ..	..	Rossiter & Hasslacher	..
100 ..	..	Wadsworth, Howland Co	Boston
50 ..	..	Wadsworth, Howland Co	..
50 ..	..	..	Philadelphia

SODA ASH.

Quantity	From	Importer	Port
2100 bgs.	Liverpool	Wing and Evans	New York
56 cks.	..	J. L. & D. S. Riker	..
33 ..	..	Warren and Co	Boston
400 bgs.	..	Brown Bros.	Philadelphia

SIZING.

393 bgs.	Liverpool	Warren and Co	Boston
345 ..	..	Butterworth and Co	..
209 ..	..	To order	..

SODA CRYSTALS.

100 bgs.	Liverpool	J. Marble	Boston
84 cks.	..	..	..
56 bdls	..	Warren and Co	..

SULPHUR.

11336 bgs.	Liverpool	Linder & Meyer	Boston

COLOURS.

17 bdls.	Antwerp	Andreyhovir & Co	Philadelphia

JUTE.

33 bales	Liverpool	Bailey & Co	Philadelphia

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
AB	50	19	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
ABa	55	21	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
AC	60	23	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
ACa	65	25	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
AD	71	28	750	37	0	865	43	5	200	10	0	120	6	0	90	4	10
ADa	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
AE	83	32	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
AEa	91	35	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
AF	95	37	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
AFa	100	39	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
AG	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
AGa	113	44	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
AH	120	47	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
AHa	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
AI	160	63	2,375	118	15	2,400	120	0	390	19	0	160	8	0	120	6	0
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Commercial Intelligence.

Re CHARLES HENRY HALL, Printer and Publisher.

At a sitting of the London Bankruptcy Court, recently held before Mr. Registrar Hope, this debtor attended for public examination. Mr. H. Brougham, official receiver, reported that the debtor had only filed his accounts that morning, and as he wanted time for investigation he had to apply for a postponement of the examination. By consent of all parties the hearing was adjourned to February 24th. The accounts show unsecured debts, £1,315 3s. 11d.; fully secured debts, £584 4s. 5d.; partly secured debts, £547 9s. 9d. (security, £70); and preferential claims, £27 17s. 6d. The assets are valued at £240, and consist of cash in the hands of the sheriff in Lancashire, £135; and book debts, £105. The debtor traded as a printer and publisher at 161, Strand, as the Empire Publishing Co., and at Preston as the Empire Printing Co. The following are the principal creditors, viz.:—

UNSECURED.

— Dalziels, Camden town	£10
— Boothby, Thames Ditton	5[illegible]
Dr. Copinger, Manchester	In dispute
Feilden, MacAllan, Gray's-inn-road	29
— Freeman, Battersea	11
E. Feilden, Balham	40
Wilfred Head and Co., Fleet-lane	328
Hare and Co., Bride-court, Fleet-street	13
Walter Hill and Co., Southampton-row	109
Harding and Co., Preston	18
Marshall and Co., Arundel-street	45
North of Ireland Paper Mills, Ballyclare, Antrim	220
Newsagents' Review, Fleet-street	13
Newspaper Distributing Co., Bouverie-street, E.C.	15
J. Pollock and Son, Queen-street	124
Trade and Industry, Ltd., Strand	79
Taylor, Garnett and Evans, Manchester	24
Turner and Co., Salisbury-square	12
Rev. F. C. Wright, Preston	40
W. Watson, Preston	14
William's Typewriter Co., Newgate-street	12
Alexander and Co., Strand	10

FULLY SECURED.

Birkbeck Bank, Chancery-lane	284
T. G. V. Feilden, Crouch-end	300

PARTLY SECURED.

B. F. Linnell, Chancery-lane (Security valued at £70.)	312
London Printing Alliance (Security valued at nil.)	235

PREFERENTIAL.

Wages	27

The deficiency account shows the following items, viz:—

Excess of assets over liabilities at November, 1896	£2,388	0	0
Present deficiency according to statement of affairs	1,580	11	2
	£3,968	11	2
Net loss on the trade since November, 1896	£2,806	11	9
Household and personal expenses since November, 1896	245	3	5
Depreciation in the value of investments	215	5	7
Law costs	206	16	8
Insurances	25	1	3
Payments on loans	369	12	6
Travelling expenses	100	0	0
	£3,968	11	2

Abridged Patent Specifications.

8,451 (97).—**Improvements in Paper Folding Machines.**—JOHN SAMUEL CUNDALL, ROBERT DINSDALE CUNDALL, and WILLIAM DENTON CUNDALL. Accepted 30th October, 1897.

Relates to machines for folding paper into two, three, four, or more folds, the object being to prevent the creases or puckering of machine-folded paper within the seam, which has been hitherto unavoidable when the paper has been folded at right angles three or four times. This is accomplished by cutting or severing the edges of the paper at a given part of the folding operation, and is effected by self-acting mechanism whilst the folded paper is passing through the machine, care being taken to ensure the edges of the paper being severed a short distance beyond the half of its width for the next fold.

18,630 (97).—**Improvements in or relating to Means for Supporting Rolls of Paper to be Supplied to Paper Cutting Machines.**—CARL WEISS. Accepted 6th November, 1897.

Machines for cutting up rolls of paper into sheets are, as is well known, generally combined with stands on which the rolls of paper are supported. A greater or less number of rolls are employed in order to enable several sheets to be cut at once. For this reason the above-mentioned stands for the paper rolls have been made hitherto of very large dimensions, and the bearings for the rolls generally arranged one over another. This usual construction is subject to the drawback that the introduction of the heavy paper rolls into the upper bearings is very difficult, and often requires the use of hoists. These stands moreover occupy, even with only a few paper rolls, a considerable space compared to the cutting machine itself. To obviate all these drawbacks a rotatable frame for supporting the rolls of paper is employed, which forms the subject of the present invention. It is characterised by bearings for the shafts of the paper rolls being arranged in a circle round and on the periphery of rotable discs or circular frames.

23,180 (97).—**Improvements in Machines for Scoring, Grooving, and Cutting Cardboard and Similar Materials Employed in the Manufacture of Boxes and the like.**—ARTHUR WILLIAM STEVENSON and NATHANIEL BOTT CHADWICK. Accepted 13th November, 1897.

The improvements claimed in this invention consist chiefly in arranging the saw shaft in such a manner that the boards to be scored run over the saws instead of beneath them as heretofore, and in arranging a separate adjustable pressure roller or disc over each saw instead of employing one roller for all the saws.

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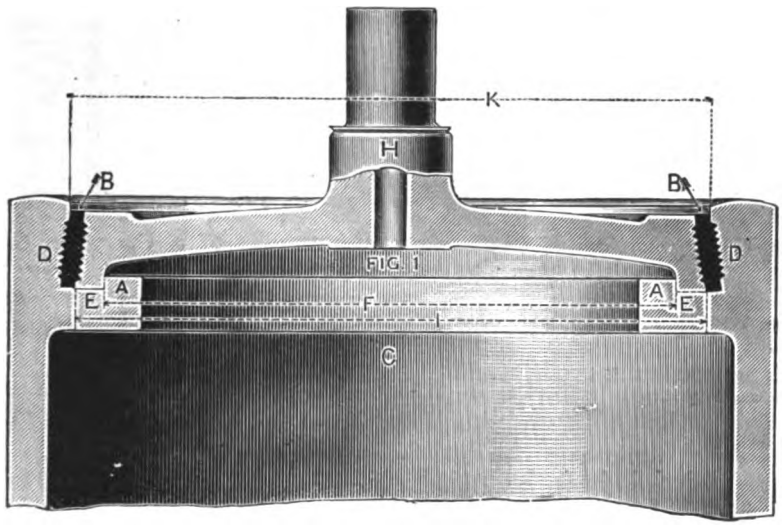

FIG. 1

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VOL. XXIX. No. 6. LONDON: FEBRUARY 11, 1898. EVERY FRIDAY. PRICE SIXPENCE.

THE TREATMENT OF

Waste Waters from the Machine.

ARTICLE II.

The various systems by which the solid matters in suspension in the water obtained from the paper machine is recovered for subsequent use and the water thereby rendered fit for further purposes may be broadly divided into two classes. The first of these comprises such methods as require the use of a pulp saver, as it is called, and the second class includes various plans and modifications of the settling tank method.

In the former case it should be noticed that the recovery is only a partial one, as it is quite impossible for any apparatus formed on the principle of the usual type of pulp saver to retain all the solids held in suspension. In the second case, the amount of actual residue obtained may be more or less complete according to the capacity of the plant, and under some circumstances it would be comparatively easy to recover almost the entire quantity.

Each system has its own peculiar advantages, however, so that although the percentage of recovery is greater in one system, it may be counterbalanced by unfavourable conditions or expenses of working.

One of the earliest devices used for separating the solid residue from the water was the conical pulp saver. This consisted of a hollow conical-shaped drum, the outer surface of which was a wire cloth of fine mesh. The water from the machines was allowed to flow on to the interior surface of the drum at the smaller end, with the result that the water passed through the wire, leaving the pulp and mineral matter to accumulate on the wire. The pulp saver continually revolved so that the gradually accumulating matter worked its way automatically down to the larger end of the conical drum, falling into an open box placed underneath to receive it.

Of late years this apparatus has been succeeded by a simpler appliance, which appears to require less attention from those in charge. The Wandel pulp saver works very much on the same principle as the washing drum on the potchers. It consists of a hollow cylindrical vessel, the outer surface of which is a fine mesh wire cloth. It slowly revolves in a suitably constructed tank which is kept supplied with the waste water. The waste water, together with the finer particles of fibre and clay which the wire fails to retain, passes through the wire cloth into the interior of the saver, and is then allowed to escape at the opening provided at one end of the drum. The pulp and clay which do not get through the wire are carried up by the revolving drum, and adhere to a small wooden roller lying upon it just above the level of the water in the tank. The adherent matter is automatically removed from the roll by a doctor which scrapes it off into a box placed below.

From the nature of the construction of pulp savers it is easy to see that it is not possible to obtain much more than 50 per cent. of the total quantity of solid matter. However fine the mesh of the wire cloth may be, a certain percentage of the pulp will always find its way through, and there are several practical difficulties in employing a mesh finer than, say 80. The holes get

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quickly clogged by pieces of pulp or clay, which the wooden roller fails to remove in the case of the Wandel, or which embed themselves in the wire of the conical saver. This lessens the capacity of the saver, and can only be obviated by cleaning the surface of the wire with a strong jet of water or steam.

In spite of the incompleteness of the separation effected, pulp savers of this description are exceedingly useful, because they require very little attention beyond an occasional cleaning, and do not demand a large floor space or area, which is an important consideration in many cases. It is clear that this method of treating the waste waters would not be effective enough in mills compelled to reduce the amount of suspended matter to a legal minimum. For these there is no resource other than some plan of settling tanks, supplemented, if desirable, by filter presses.

In this system the inconvenience of the enormous bulk of water is very apparent, and every care is needed to keep the quantity of waste water to be treated as low as possible. In practice this is managed, not only by diverting all unnecessary waste waters away from the machine pit, but by utilising the water containing the suspended matter in the potchers and beaters for breaking and beating the prepared pulp. Even when every means for thus using the water has been adopted, there still remains an enormous volume to be clarified.

The water is usually run into a series of large tanks, one or more of which, when full, are allowed to remain quiescent, so that the solid matter may settle, while the others are being filled up. After a few hours the clear supernatant liquid is run off to any desired spot, and the sediment drawn off, either to another tank whence it can be pumped to the potchers and beaters, or to some filter press. Now in this system there is plenty of scope for the ingenuity of papermakers. Thus the filling of a large tank may occupy many hours, during which time the agitation of the water caused by the rush of the liquid from the pumps completely prevents any settling taking place. The introduction, however, of suitable baffle plates erected right across the tank, so that the waste water enters at one end and gradually flows quietly along to the other, being forced to become quieter by the plates, may enable the process of settling to commence almost at once. The advantage of any such means for preventing agitation of the contents of a tank is that the time required for complete settling may be very materially shortened, the practical result being that fewer tanks could be used than would otherwise be the case.

The actual arrangements for dealing with the solid residue and water may be different in every mill, few treating them in precisely the same way. It is not always necessary, for example, to allow the sediment to settle completely. So long as the supernatant water is sufficiently clear to answer the purpose required, it can be decanted or siphoned off directly it has reached the stage at which it may be removed. The remaining mixture of water and residues can afterwards be removed for further treatment.

The use of filter presses for this mixture is often resorted to, especially when it becomes necessary to send the solid matter away rather than use it as a material to be placed in the beaters again with the better quality of pulp. Where tanks are already in existence for treating the waste waters in the manner described, it is well to know that their capacity for work may be increased by several means; that is to say, it is possible by mechanical or chemical contrivances to lessen the time required for settling, and thus allow the tank to be filled up again at shorter intervals. As far as mechanical arrangements are concerned, the chief point to be remembered is the necessity for allowing the waste water to flow quietly and evenly into the tank itself by pumping it from the machine pit into some small wooden box, so that the agitation caused by the water may to some extent be quieted down before the latter commences overflowing to the large reservoir.

An ingenious method of causing sediments to deposit quickly is in vogue with one well-known water softening process. Experience has shown that by allowing the precipitated soluble salts from one settling, or at any rate a certain proportion of an old sediment, to remain in the tank while being refilled with a fresh lot of water previously mixed with suitable precipitating reagents, the process of settling is materially hastened. It is found that when the old sediment is completely washed out before refilling, the time occupied in clarifying a second tankful of water is 30 per cent. or more longer, but that when a certain quantity of a previous sediment is left the water clarifies in less time.

This is an experiment well worth trying in respect to the suspended solid matters in waste waters from the mill. A lesson might also be taken from the process of precipitating sewage matters in which certain chemicals are added, with a view of hastening, not merely the actual precipitation itself, but also of causing the insoluble bodies produced, as well as any suspended matter, to settle quickly. To be of any service, the waste waters from the machine would require to be treated with a reagent which would be cheap, capable of making a decided difference in the effect produced, and at the same time being itself harmless to the supernatant clear water.

CANADIAN LUMBER AND PULP.—A dispatch from Montreal states that the export lumber business from that city during the past year has been a record one. The shipments have amounted to 300,420,069 feet, which include all wood pulp that passed out of that port. This is the largest in the history of the trade. These figures show an increase of 79,416,460 feet as compared with 1896, of 131,748,041 with 1895, and of 123,011,641 with 1894.

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Pure Alkali *Guaranteed* **58** *Degrees, containing* **99** *per cent. of Carbonate of Soda. It is Specially Adapted for the MANUFACTURE OF PAPER, Colours, Dyes, Soap, and Glass*

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Mr. GEO. F. BUSBRIDGE'S Golden Wedding Celebrations.

The "Father of the Paper Trade," as Mr. Geo. F. Busbridge is familiarly termed, gave a dinner and entertainment at the Swan Hotel, West Malling, Kent, on Saturday last, in celebration of his golden wedding. Great interest was shown in the event by a wide circle. Mr. Busbridge's employees to the number of over 150 attended the dinner. An invitation was kindly extended to the representative of this journal, and amongst the guests present were Messrs. G. P. Busbridge, F. G. Busbridge, and the *elite* of the neighbourhood. The usual loyal and patriotic toasts having been submitted,

Mr. STRONG, in felicitous terms, proposed the toast of the evening. He said it was a great honour for one who was only a friend and not a worker among them to have that privilege, but great privileges carried with them greater responsibilities. They met there that night, as all knew, to celebrate the golden wedding of Mr. and Mrs. George Busbridge, which occurred on the previous Wednesday, and was the 50th anniversary of a happy married life, the greater part of which had been passed among them all. He was happy to think that the major part of that period he had had the honour of knowing Mr. Busbridge, and during the whole of the time he had been acquainted with him there was nothing he could not think of without pleasure, and that he could not hold in honour to his memory. They who had had such an opportunity of seeing Mr. Busbridge and judging of his work, and what he had done during his long life must, he (the speaker) was sure, agree with him that that evening's gathering was a most pleasant and happy manner of celebrating a long and excellent life. That occasion was not only the celebration of Mr. Busbridge's golden wedding, but of his birthday, which happened on February 2nd. They must remember, further, that his words applied in tenfold greater force to his partner, Mrs. Busbridge. He did not wish to make a long speech, and he would simply ask them, therefore, to drink to the excellent health of Mr. and Mrs. Busbridge.

The toast was accorded musical honours, after which the company gave three hearty cheers.

In reply, Mr. BUSBRIDGE said it was a difficult task for him, although a pleasant one, to respond to the kind remarks made by Mr. Strong. That gentleman had said more of him possibly than he was justified in doing ("No, no,"), but let Mr. Strong say what he would of him, it only expressed his (the speaker's) regard, and his attachment, not only to East Malling, not only to the mills, but to those who had worked with him there so industriously and so pleasantly, many of them 20, 30, 40, some of them over 40, and he might say 45 years. That was a long time to look back, but he was looking back to it and to all the circumstances which had occurred during their connection together with pleasure, and that rendered it most pleasant for him to respond to the toast so agreeably presented to them by Mr. Strong. For 50 years he had been their master—(applause)—but during the whole of that time he could ask if one of them could point to him as having been a hard master, as having been a bad master, or a master who had not considered their pleasures or their interests. (Applause.) That being so, he was glad to meet them there that night, as he had met them on so many previous occasions. That was a special occasion, an occasion which made him think of time's ravages. And having passed fifty years among them he could look upon many of them as old friends, as old acquaintances, and say their connection had been a pleasant one. He was sure most of them, or all of them, were satisfied, and he had the best proof of that there before him. (Cheers.) "What does this show" (said the speaker holding up a silver dessert stand). It was not so much the present, but the evidence of their feelings towards him, showing that he had tried to do, and that he had succeeded in doing, all he could for their mutual benefit and their mutual advantage, and what had been in the past, he trusted, while he lived, nothing would go back in the future—that their friendship would increase and that their connection would be more pleasant than it had been, although it had been very favourable. (Cheers.) He did not look upon their present as all; there was something he loved, appreciated, and admired more, and that was the loving hearts which had contributed and presented it to him. (Applause.) They might be sure he would never forget, as he did not forget the many times he had met them before, and the good feeling which they had always evinced towards him and his family. He might say for Mrs. Busbridge that she desired him to express towards them all her heartfelt thanks for their remembrance of them on that memorable occasion. (Cheers.) And, therefore, he could say, valuable as their present was, it was not so valuable as the golden love which he had for them. (Cheers.) In conclusion, the speaker said he should propose success to the East Malling Mills. The continued success of those mills depended upon those present, upon their efforts, upon their doing what was right, upon their doing that which they undertook to do, and, he was going to say, for which they were paid to do. All of them worked for their living, in whatever station of life they were placed, and whatever they carried out depended a good deal for its success upon those who looked over them. He might say that the success of the East Malling Mills, great as it had been, had been due in a large measure to their efforts and to the managers who had been placed over them. He asked them, therefore, to drink success to the East Malling Mills, coupling with the toast the names of Messrs. Blunden and Plater.

Both gentlemen having suitably responded, the latter at some length, the company ren-

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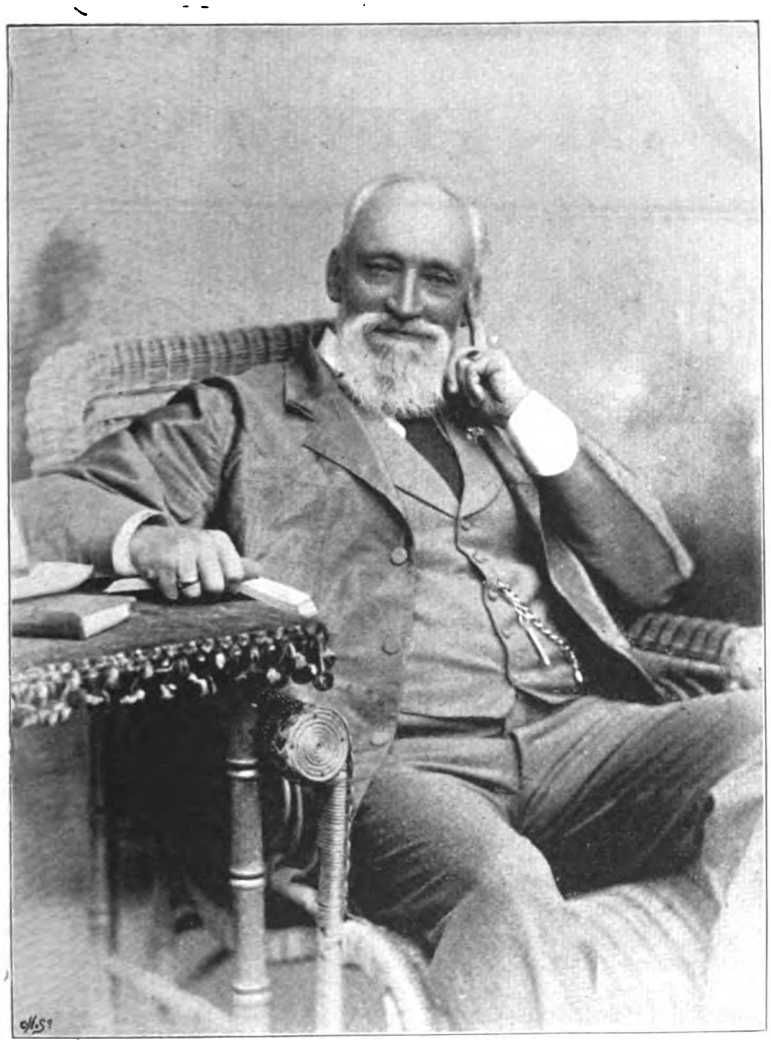
dered a song, to the tune of Auld Lang Syne, written by Mr. G. F. Busbridge, for the Mill festival, given on February 2nd, 1858.

The remainder of the evening was spent in conviviality, dancing being the chief item of the programme.



Yours Truly
Geo F Busbridge

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Papermaker

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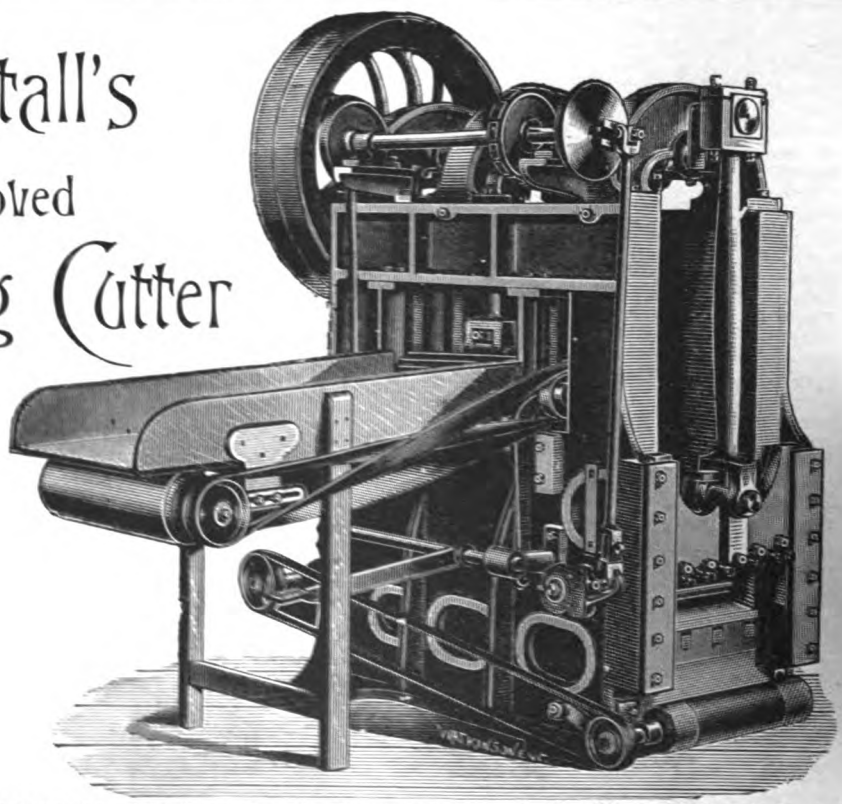
Nuttall's Improved Rag Cutter



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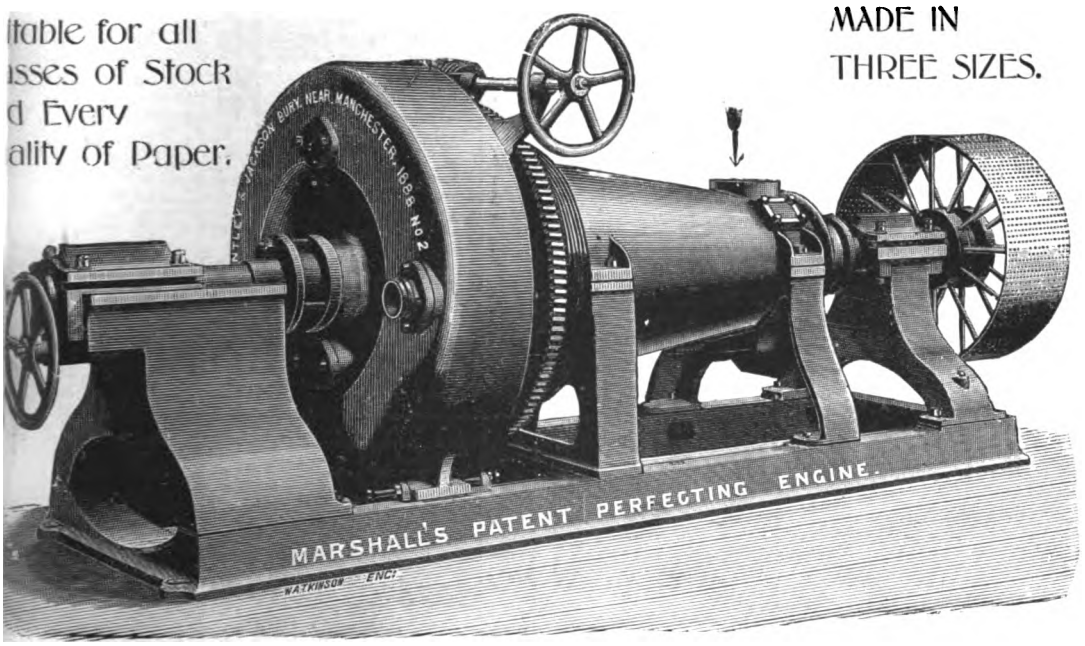

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LARGE BRITISH IMPORTS OF American and Canadian Wood Pulp.

The steamer "Isis" arrived last week at Manchester from Bucksport, for account of Messrs. A. Wertheim and Co., Hamburg, with a full cargo of sulphite and mechanical pulp on board, nearly 3,000 tons.

The steamer "Michigan" which arrived recently, brought for the same firm about 4,000 tons.

We learn that considerable contracts have also been closed by other firms for successive delivery over this year, for which freight contracts have already been fixed.

It therefore appears that the regular importation of American and Canadian woodpulps into this country can be looked upon as an established factor.

Arrivals of Esparto.

The imports of esparto during January show a falling off compared with the first month of last year. The difference amounts to 893 tons, and the value to £6,188. The following are the totals for last month and for the corresponding months of the two previous years :—

TOTAL IMPORTS.

January,	1898	18,378 tons	£72,577
,,	1897	19,271 ,,	78,765
,,	1896	14,481 ,,	63,230

The quantity received from Spain last month reached 5,373 tons, of the value of £28,124, compared with 7,304 tons, of the value of £36,583 for the month of January last year.

There was an increase in the receipts from Algeria, the quantity standing at 7,900 tons of the value of £27,557, compared with 4,652 tons of the value of £17,613.

The quantity received from other countries was 5,105 tons of the value of £16,896, compared with 7,315 tons of the value of £24,569.

Stocks and Shares.

The market during the past week has again been irregular, and more business has been done than for some time past. Among the advances, East Lancashire are again to the front with ¼ each on ord. and pref. Sellers are very scarce in this security at present, and it seems likely to be so for some time to come. Bury pref. are also steady at a slight advance. Darwen are strong at an advance of ¼. Peebles pref. are ¼ up, whilst the ord. have had a set back and fallen ⅛. The dividend is announced at 8½ per cent., again last half-year. Hartlepool' , and North of Ireland hav nd the Star ord. have eas

In Chemicals the tone is firm, and several upward movements are noticeable, particularly Brunner, Mond's at ¾ advance. United Alkali pref. are ⅛ up, as also are Bowman, Thompson and Co. pref. Castner's are stronger at 22s. 6d. buyers, and United Alkali debs. are 1 better.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices Feb. 7th.
5	5	Hyde Paper Works Co. (Ld.)	nil	1⅛—2
10	10	Bath Paper Mill Co. ,,	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	103—105
10	10	do. do. 6% pref.	6	12—13
3½	5	Burnley Paper Co. (Ld.)	10	6—6½
7	7	Bury Paper, ord. ,,	6	6½—6⅝
7	7	do. 6% pref.	6	7⅛—7⅜
2⅞	3	Collin (Darwen) Paper ,,	nil	4/6—5/6
3½	5	Darwen Paper Co. ,,	15	7⅜—8⅛ x.d.
10	10	E. Lancashire Paper Co. ,,	nil	6—6½
10	10	do. do. 6% pref.	nil	6½—7
5	5	do. do. bonus	nil	2½—3
4	5	Hartlepool Pulp & Paper ,,	10	7½—7⅝ c.d.
2½	5	Kelln'r-Part'gt'n P'p Co ,,	15	7⅛—8⅛
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7⅛—7⅜
7	10	Olive Brothers ,,	10	7½—7⅝
5	5	Peebles (A. M.) & Son ,,	8	7⅜—8⅛
5	5	do. 5% cum. pref.	5	6⅝—6⅞
100	Stock	do. 4½% deb. issued 105	4½	111½—112½
3	5	Ramsbottom Paper Co. ,,	10	7—7½ c.d.
1	1	do. do. cum. pref.	5	1⅜—1⅝ c.d.
4½	5	Roach Bridge Paper Co. ,,	10	5—5½ x.d.
5	5	Star Paper Co.	10	7½—7⅝
3	5	do. do. cum. pref.	10	6½—6⅝
1	1	Thomas Owen & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2—2½
10	10	Waterlow & Sons non.-cum. def.	12	15½—15⅝
		do. do. non.-cum. pref.		15½—15⅝
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	8½—8¾
10	10	do. do. cum. pref.	7	11⅜—11⅝
100	100	do. do. debs. (red. 1924)	6	104—106
10	10	Brunner, Mond & Co. (Ld.)	20	41⅞—42⅛
3½	10	do. do. "New" ,,	20	16¾—17⅛
10	10	do. do. 7% pref. ,,	7	17⅞—18⅛
5	10	do. do. do. new issue	7	8½—8¾
1	1	Castner-Kellner Co. ,,	—	22/6—23/6
5	5	Clayton Aniline cum. pref.	6	5⅞—6⅛
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11½—11¾
100	Stock	do. do. deb. stock (red. 1912).	4	105—106
10	10	United Alkali Co. ,,	2	2⅛—2⅜
10	10	do. do. cum. pref. ,,	7	9⅞—9⅞
100	Stock	do. mort. deb. (red. after 1901)	5	111⅛—111⅝

RE-EXPORTS OF FOREIGN PAPER.—During last month unprinted paper was re-exported to the quantity of 4,754 cwts. of the value of £4,709; printed paper, 73 cwts., of the value of £274; and straw, mill, and wood pulp boards to the extent of 3,928 cwts., of the value of £1,605. The total reached 8,755 cwts., of the value of £6,588, compared with 8,994 cwts., of the value of £7,197 for January, 1897, and 9,057 cwts., of the value of £6,465 for January, 1896.

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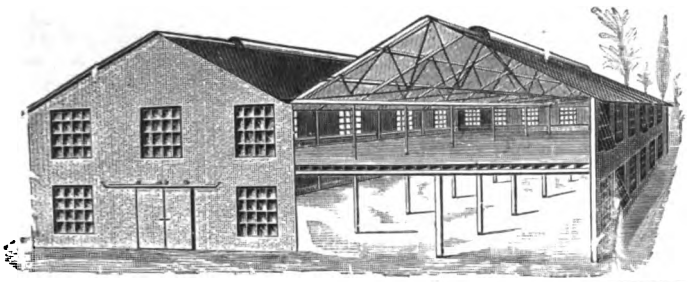
IRON ROOFS AND BUILDINGS,



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The Treatment of Fibrous Materials.

A Continuous Process for the Disintegration and Washing of Rags, etc.

An improved process is claimed by Mr. J. H. Annandale, of Polton Paper Works, Midlothian, who has recently been granted a patent for disintegrating and washing rags or other fibrous material. The object is to economize space and power, and to effect a saving of water.

Fig. 1 is a vertical section of the improved disintegrating apparatus; Fig. 2 a longitudinal section of the same; and Fig. 3 a diagrammatic view to a smaller scale of the sand table and washing apparatus, showing the connection to the disintegrator.

The rags or other fibrous material, preferably after preliminary cleansing in a rag washing or brushing machine to remove the grosser impurities, are fed with water through a hopper A' into the improved disintegrating apparatus A, hereinafter described, and in which they are reduced into coarse pulp by means of a toothed cone or roll B rapidly rotated within a toothed

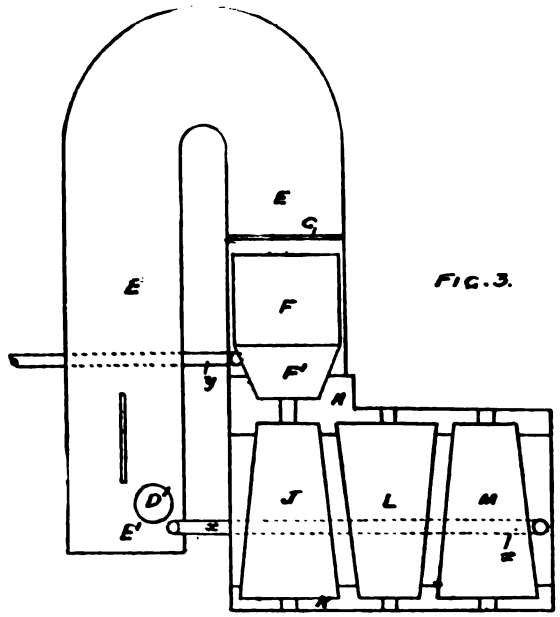

FIG. 3.

FIG. 2.

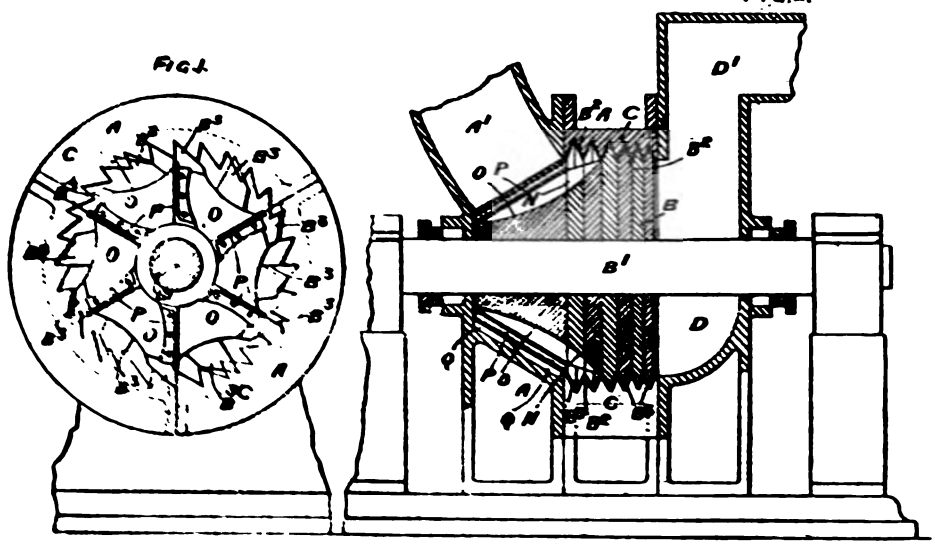

FIG. 1.

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casing C and delivered into a tank or vessel D.

The rags may be passed through two or more disintegrators arranged to gradually disintegrate the material, in which case the preliminary washing or cleansing of the rags may be effected in the first of the series of disintegrators instead of in a separate machine, the object of the preliminary washing being to avoid forcing the dirt into the fibre.

From the tank D receiving the rags reduced to pulp from the disintegrator A the pulp is delivered by gravitation or by means of pumps, or otherwise by way of a pipe D^1 into one end E^1 of a sand table E, which is preferably of the vibratory type, and which has a large circulating flow of water to dilute the pulp and allow of easy settlement of heavy particles. The circulation is effected by a drum washer F, which delivers its water back to the point where the pulp enters the sand table. After separation of the heavy impurities in the sand table, shown in outline in Fig. 3, the material travels along a channel in which is fitted a dipping sluice or skimmer G for holding back or removing floating matter. After passing through the drum washer F the stuff passes into the cone washer F^1 or conical strainer, which delivers it into a water trough H at the opposite end, whilst the escaping water flows back by way of the pipe Y to the hopper A^1 through which the stuff is fed into the disintegrator A. The rag or stuff delivered from the cone washer F^1 is stirred up by a "hog" or similar device in the water within the trough H into which clean water is admitted, the stuff being lifted into a second cone washer J which delivers it into a trough K at the opposite end; and it may be thus carried also through the cone washers L, M, or through a series of cone washers with intermediate disintegrators if necessary, being each time stirred up and washed in water which escapes through the cone washers and passes back to meet the rag or stuff at an earlier stage of the washing operation by the pipe x, as shown at Fig. 3, and finally to the disintegrator. Whilst thus continuously fed forward, the stuff is freed at each stage from the water used in washing it, and a comparatively small quantity of water suffices to effect the washing operation.

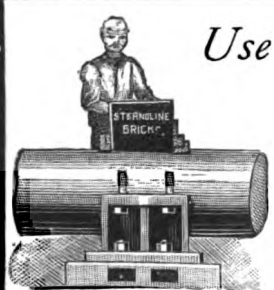
The improved disintegrator A is composed of a cylindrical or conical toothed roll or serrated cutter B, or series of cutters secured upon a rotating shaft B^1, and adapted to revolve in contact with a cutter casing C or stationary cutter plates or beds wholly or partially encircling the rotating cutters B, and between which cutters the rags or other fibrous materials are fed in with water as already mentioned from a hopper A at one end, and after disintegration are delivered at the opposite end.

The rotating cutters B are made up of a number of bevel-edged discs strung together and secured upon the shaft B^1, or they may be formed by a single-cylinder roll or cone of steel or other hard material having a number of V-shaped or other grooves B^2 cut circumferentially around it so as to leave sharp ridges which are cut across to form a number of saw like teeth B^3 on each ridge. The cutters B in the stationary bed or encircling casing C are formed of toothed grooves and ridges, so that the sides of the ridges of the rotating cutters B bear on the sides of those of the stationary cutters C, and the teeth on the former during the rotation impinge on or are brought into close contact with those of the stationary cutters C.

The teeth of the casing or stationary cutter C may be fixed to movable plates, which can be moved closer to the roll or series of rotating cutters till they come in contact if need be. The teeth are set respectively on the roll and plate to exactly fit each other, so that nothing can escape pulverisation, but they may be spaced in the circumference to allow of the passage of the fibre.

At the feeding in end of the rotating cone or cylinder a scooped cone O is attached, on which are one or more serrated wipers or bars P, and the casing on the low side, which is practically the bottom of the feed hopper A^1, has also bars Q, so that the fibrous mass in passing between them is brushed out and prepared to more easily enter the teeth.

In the operation of the disintegrating apparatus A, the fibre fed with a supply of water by the feed hopper A^1 is distributed by the wipers P of the cone O, and delivered partly by circulation and flow of water and partly by the action of the cone into the teeth, where it is speedily disintegrated by their tearing action into a fine regular fibre.



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British Imports of Foreign Paper.

FOR THE MONTH OF JANUARY, 1896-7-8.

UNPRINTED.

COUNTRY.	QUANTITY.			VALUE.		
	1896.	1897.	1898.	1896.	1897.	1898.
QUANTITY	Cwts.	Cwts.	Cwts.	£	£	£
Sweden	40,023	41,089	39,308	31,736	27,427	28,661
Germany	48,309	41,893	35,739	44,982	38,316	31,533
Holland	51,685	46,336	37,393	38,298	35,239	32,641
Belgium	19,591	17,030	21,902	24,907	20,091	26,306
Various	52,265	74,730	129,311	60,798	65,162	99,847
TOTALS	212,363	221,028	262,653	200,493	188,245	218,988

PRINTED.

VALUE.						
Sweden	629	653	1,671	2,055	2,336	4,098
Germany...	1,451	1,983	1,250	4,807	5,404	4,747
Holland	2,224	4,560	3,472	4,743	12,557	9,456
Belgium	783	1,122	833	4,008	5,830	4,367
Various	1,217	1,502	2,795	4,206	3,123	6,238
TOTALS	£6,255	£9,850	£10,021	£19,819	£29,250	£28,906

STRAW, MILL, & WOOD PULP BOARDS.

	Cwts.	Cwts.	Cwts.	£	£	£
TOTALS	116,175	83,005	161,743	40,296	29,611	59,833

TOTALS.

January,	1898	434,417 cwts.	January,	1898	£307,727
,,	1897	313,883 ,,	,,	1897	247,106
,,	1896	334,793 ,,	,,	1896	260,608

Canadian Notes.

CHICOUTIMI PULP CO.—Mr. Nojune Garneau, M.P., who is one of the shareholders of the new Chicoutimi Pulp Company, says that the company is prepared to contribute a handsome sum to the proposed bridge across the St. Lawrence at Quebec. If the bridge does not go up, the company would aid a line of ferry steamers crossing to Levis, to which it could carry the company's product for shipment *via* the Intercolonial railway by way of Halifax to England.

DEVELOPING THE UNKNOWN NORTH.—A railway is projected from Toronto to St. James' Bay. There is an immense and practically unexplored region between the settled portion of Ontario and the great inland sea, which abounds in splendid spruce forests, as well as other timber. These are some fine water powers, so it is claimed, and with a railroad built, paper, pulp and lumber mills would naturally spring up. A meeting was held recently in Toronto, presided over by Mayor Shaw, and the matter was generally discussed. It was decided that Government aid was necessary, and a committee of provincial citizens and local members of Parliament was appointed to consider the question.

THE MARITIME SULPHITE FIBRE CO. have completed a mill on the Canada Dock at Chatham, N.B., for cutting, barking and preparing wood for its pulp grinders and digesters. A similar mill is in course of construction at the company's Wellington-street wood yard.

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CROOKES, ROBERTS & Co.,

Argus Works,

SHEFFIELD.

Telegrams: "Argus, Sheffield."

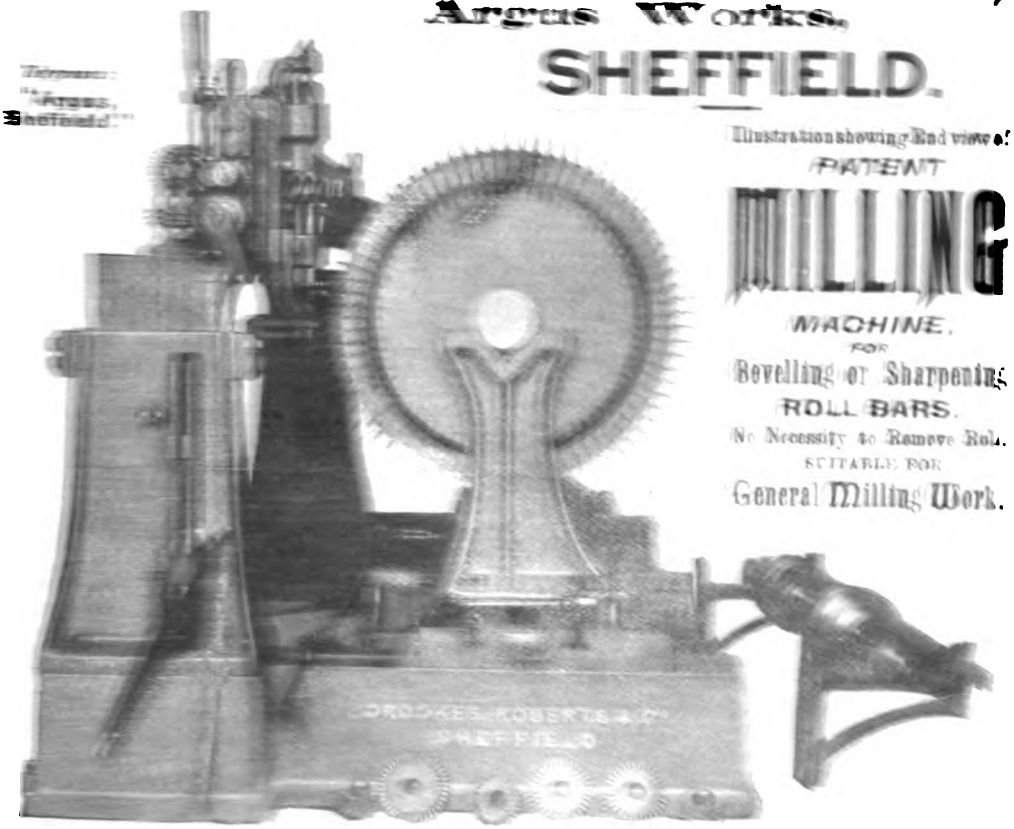

Illustration showing End view of

PATENT

MILLING

MACHINE,

FOR

Bevelling or Sharpening

ROLL BARS.

No Necessity to Remove Roll.

SUITABLE FOR

General Milling Work.

RAG ENGINE ROLL BARS AND BED PLATES

In Special Bronze Composition, Q. I. BB Best Refined Crucible Cast Steel, Refined Crucible Cast Steel and Selected Bessemer Steel.

CIRCULAR KNIVES,

RAG & ROPE

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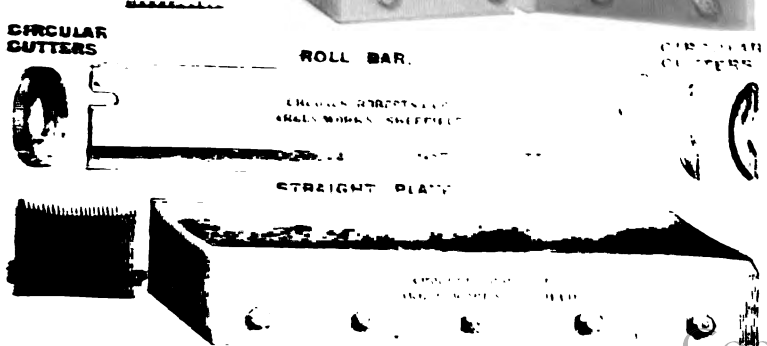
and all other

MACHINE KNIVES

STEAM HAMMERS

Specially adapted for Re-drawing Roll Bars



☞ EVERY DESCRIPTION OF TOOLS USED BY PAPERMAKERS. ☜

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

BIRMINGHAM WATERPROOF PAPER CO., LTD.—At a meeting held at 53, New-street, Birmingham, on the 2nd inst., the following extraordinary resolution was duly passed:—"That it has been proved to the satisfaction of this meeting that the company cannot by reason of its liabilities continue its business, and that it is advisable to wind up the same, and accordingly that the company be wound up voluntarily." Mr. J. W. G. Hill, of Bennett's-hill, Birmingham, was appointed liquidator.

THE DIEPPE PULP AND PAPER MILLS, LTD.—An extraordinary general meeting of the shareholders of the Dieppe Pulp and Paper Mills Co., Ltd., in liquidation, will be held at the offices of Messrs. Ball, Baker, Deed, Cornish and Co., 1, Gresham-buildings, Basinghall-street, E.C., on Tuesday, March 8th. The liquidators, Messrs. C. C. Baker and Frederick Chapman, will give an account of the winding-up of the company, and the remuneration to be paid them will be fixed.

RE A. HENRY AND GABBOTT, York Mills, Mill-street, Ancoats, Manchester, rag and paper merchants, in bankruptcy. A dividend is intended to be declared in this case; creditors should send in particulars of their claims by the 25th inst., to the trustee, Mr. J. T. Trotter, 27, Brazennose-street, Manchester.

RE E. NEWTON, 6, Palace-square, Manchester, paper merchant, in bankruptcy. A first and final dividend of 1s. 3½d. has been declared in this case, and is payable on the 18th inst. at the office of Messrs. T. Smethurst and Co., 26, Pall Mall, Manchester.

A NOTICE appears in the *London Gazette* for the 28th ult., to the effect that at the expiration of three months from that date, the undermentioned companies will, unless cause be shown to the contrary, be struck off the Register of Joint Stock Companies, and thereby dissolved:—

Birmingham Waterproof Paper Co., Ltd.
Caustic Soda and Chlorine Syndicate, Ltd.
Chadderton Iron Works Co., Ltd.
Franco-English Tunisian Esparto Fibre Supply Co., Ltd.
Ottoman Paper Manufacturing Co., Ltd.
Peat Utilisation Co., Ltd.
Quebec Asbestos Co., Ltd.
Rhea Treatment Syndicate (Casper's Patents), Ltd.
Stanley Paper Fibre Co., Ltd.

"PEGAMOID."—Shareholders in Pegamoid, Ltd., cannot be congratulated on the price at which the shares are standing at the present time, the £1 share being quoted ½ to ⅝. Recently a company was formed in America, and some influential people are connected with the undertaking. Future developments, no doubt, will be watched with interest. A good word was spoken for "Pegamoid" at the meeting of shareholders in Eley Bros., Ltd., held on Monday. The chairman, Mr. Charles Eley, said the board had thought it advisable to take an interest in the Pegamoid Papers Syndicate to the extent of £1,000, because Eley Brothers held the exclusive license for this country, India, and the Colonies for the manufacture of waterproof cartridges from Pegamoid Papers Syndicate. The directors attached considerable value to those rights, as the Pegamoid cartridge was the only waterproof cartridge in the world. The sale of the company's interest in that syndicate resulted in a profit of £917 in cash and the acquisition of 1,000 shares fully paid.

FIRE.—On Monday, last week, a fire occurred at Lower Glory Mill, Wooburn, formerly known as Turney's Mill, but now in the occupation of the West Drayton Millboard Company. Fortunately the flames were quickly quenched before much damage was done.

DEATH OF MR. J. H. JACKSON.—The death is announced of this gentleman, connected with Jackson's Millboard and Paper Company, of Gunpowder and Prince's Mills, Bourne End. The funeral was attended by the whole of the employees of the mill.

SEAMLESS BOXES FROM WOOD PULP, ETC.—A patent has recently been granted Messrs. Atkinson and Aldred, of Manchester, relating to seamless boxes to be made from wood pulp, straw pulp and all paper fibres, by a process which consists of molding the pulp into various shaped and sized boxes by means of moulds into which the pulp is run and then pressed into shape by a hollow copper or steel block, into which steam is injected for the purpose of drying the pulp. The shaped box is then taken out of the mould still adhering to the block and subjected to heat and friction for the purpose of highly finishing the surface; or left rough. The lid and body of box being made by the same process. Boxes to be made in all colours.

FIRE AT A GLASGOW PAPER MILL.—A fire broke out on Monday night at 36, McNeil-street, South-street, Glasgow, occupied by Messrs. Stewart and Sons, of the Glasgow Paper Mills. The seat of the fire was a rag store attached to No. 3 mill. The building is a brick erection two stories in height, and measuring about 120-ft. by 36-ft. The brigade, under Captain Paterson, successfully attacked the flames, and succeeded in preventing the fire spreading to adjoining property. The damage to stock and buildings is estimated between £1,200 and £1,500.

RE SAMUEL WHITING.—The discharge of this debtor, a rag merchant of Plymouth, has been suspended for two years.

"THE STRAND MAGAZINE" for February well maintains its popularity, the contents being extremely varied and highly interesting, whilst its pages are profusely illustrated. In addition to contributions devoted to fiction, the articles on "Trade Trophies," "Royal Menus," "A Cruise on Wheels," and "Curious Masks" deserve special mention. The illustrations from photographs, showing "Curiosities" are very amusing, and "Glimpses of Nature," by Grant Allen, afford instructive reading.

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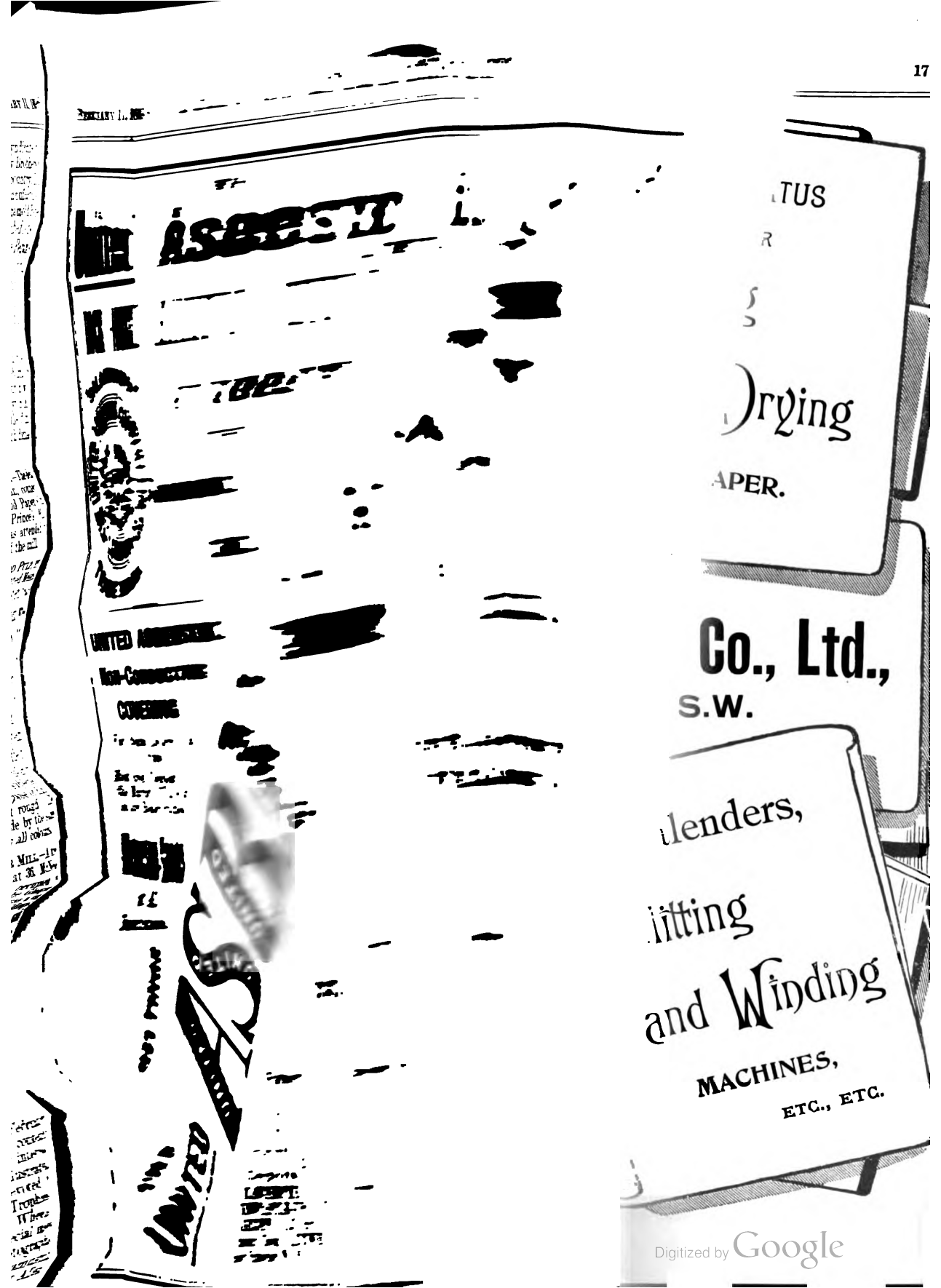

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Exports of British Paper

FOR THE MONTH OF JANUARY, 1896-7-8.

PRINTINGS AND WRITINGS.

COUNTRY.	QUANTITY.			VALUE.		
	1896.	1897.	1898.	1896.	1897.	1898.
	Cwts.	Cwts.	Cwts.	£	£	£
France	4,978	2,928	2,563	8,060	5,172	4,894
U. States	1,254	1,070	1,503	2,684	2,277	2,225
S. Africa	6,168	4,653	4,752	10,490	7,394	6,807
E. Indies	6,011	5,406	6,122	9,828	9,893	10,277
Australasia... ...	30,258	20,430	23,478	37,268	29,859	29,955
B. N. America ...	1,132	904	732	1,926	2,000	1,503
Various	14,833	9,584	10,461	25,759	17,739	17,142
TOTALS ...	64,634	44,975	49,611	96,015	74,334	72,803

OTHER KINDS.

(Excluding Hangings).

	Cwts.	Cwts.	Cwts.	£	£	£
France	1,193	799	1,187	2,371	3,137	2,835
U. States...	1,502	652	529	5,074	2,365	1,747
S. Africa	4,744	4,577	2,899	4,432	4,322	3,008
E. Indies	1,904	955	1,653	2,430	1,638	2,259
Australasia	11,341	10,269	7,784	10,442	9,032	8,011
B. N. America ...	413	129	289	665	360	645
Various	3,573	3,846	3,503	7,045	6,507	5,961
TOTALS	24,670	21,227	17,844	32,459	27,361	24,466

TOTALS *(Including Hangings)*:

January, 1898	74,816 cwts.	January, 1898	£116,277
,, 1897	73,170 ,,	,, 1897	119,224
,, 1896	95,785 ,,	,, 1896	145,114

American Notes.

CHEMICAL WORKS IN THE UNITED STATES.—A New York contemporary states that the United Alkali Company, Bay City, Mich., have closed contracts for Sterling boilers and engines. The lime to be used will come from quarries north of Alpena. About 1,500 men will be employed.

ELECTRIC POWER.—Messrs. Whitney and Co., paper box manufacturers, Leominster, Mass., have recently put in an electric plant, and are now running their entire machinery (requiring 75 horse-power) by electricity.

EXTENSIVE improvements are contemplated for Zug or Brady Island, the property of the Solvay Process Company, of Delray, Mich. The advent of the Detroit and Lima Northern, in Detroit, has already caused a saving of 30 cents per ton for coal for manufacturing purposes, and still lower prices are anticipated.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included the following:—To London, 24 packages and 440 bundles; Leicester, 193 packages; Leeds, 40 packages; Liverpool, 25 packages and 1,162 bundles; Southampton, 67 packages; Cardiff, 117 packages; Glasgow, 302 packages; and to Hull, 718 packages. Shipments to Antwerp amounted to 68 packages; Bremerhaven, 26 cases; Copenhagen, 40 packages; and to Hambro, 6 cases. Other shipments included 279 cases to Argentine; to B. W. Indies, 437 packages; Australasia, 306 packages; Brazil, 18 packages; Africa, 143 packages; C. America, 70 packages; Japan, 631 packages; Mexico, 89 packages; and to N. Zealand, 496 packages.

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Established 1879.

Printed and Published EVERY FRIDAY

By W. JOHN STONHILL.

at 58, Shoe Lane, London, E.C.,

Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, FEBRUARY 11, 1898.

The Medway Mills' Smell.

The hardship inflicted upon the Medway Paper Mills Co., owing to the perpetual injunction obtained by Mr. R. J. Balston, on the ground of alleged nuisance, was referred to in our last issue, and we are glad that the trade throughout the country have taken an interest in the matter as to promise support in the event of an appeal. We believe the recent decision is being considered by counsel on behalf of the Papermakers' Association and the Machinery Users' Association, and if favourable a guarantee fund will be raised to carry the important issue, if necessary, to the House of Lords. Papermakers and other manufacturers, although uninterrupted for thirty or forty years in their operations, can hardly feel safe in view of the decision in the action of Balston *v.* Medway Paper Mills Co., Ltd.

* * *

Exports of British Paper.

The quantity of British paper exported last month compares favourably with that for January last year, but the value shows a slight decline. The total exports amounted to 74,816 cwts., of the value of £116,277, a comparative increase of 1,646 cwts. and a decline in value of £2,947. The quantity of writings, printings, and envelopes exported reached 49,611 cwts., of the value of £72,803, compared with 44,975 cwts. and £74,334 for January last year. "Other kinds" of paper exported amounted to 17,844 cwts. of the value of £24,466, the figures for the corresponding month of last year being 21,227 cwts. and £27,361. The following are the comparative values of the exports of paper (excluding hangings) to the countries mentioned during the month of January for this and the preceding year:—

	Jan., 1897.	Jan., 1898.	Increase or Decrease.
France	£8,309	£7,729 —	£680
U.S.A.	4,642	3,972 —	670
S. Africa	11,716	9,815 —	1,901
E. Indies	11,531	125,36 +	1,005
Australasia ...	38,891	37,966 —	925
B. N. America	2,360	2,148 —	212
Various	24,246	23,103 —	1,143
Totals ...	£101,695	£97,269 —	£4,426

Decreases are to be noted throughout, with the exception of the East Indies.

* * *

Foreign Paper in Great Britain.

The Board of Trade Returns for January show an increased importation of foreign paper, compared with the corresponding month of last year, the respective totals being £307,727, against £247,106. The comparative values of "unprinted" paper received from the under-mentioned countries were as follows:—

	Jan., 1897.	Jan., 1898.	Increase or Decrease.
Sweden	£27,427	£28,661 +	£1,234
Germany... ...	38,316	31,533 -	6,783
Holland	37,249	32,641 -	4,608
Belgium	20,091	26,306 +	6,215
Various	65,162	99,847 ÷	34,685
Totals ...	£188,215	£218,988 +	£30,743

Under "other countries" a large increase is shown, which may be attributed to some extent to the importation of paper from the United States. The quantity of "unprinted" paper received last month reached 262,653 cwts., an increase of 41,625 cwts. compared with January last year. "Printed" paper was imported to the extent of 10,021 cwts., of the value of £28,906, a comparative increase of 171 cwts. in quantity and a decline of £344 in value. The demand for foreign strawboards, millboards, and wood pulp boards shows a big expansion, the quantity for last month being 161,743 cwts., of the value of £59,833, a comparative increase, taking the figures for January, 1897, of 78,738 cwts. and £30,222. The month's re-exports of paper reached a total value of £6,588, against £7,197 for the corresponding month of last year.

* * *

Papermakers' Raw Materials.

An excellent feature of the past year was the increased demand for raw materials, which tended to show that there were

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plenty of orders on hand for paper, and that British papermakers were called upon to increase production. The New Year has not opened so well, and the imports of papermaking materials show a decline. The following are the comparative values for last month and for January, 1897:—

	Jan. 1897.	Jan. 1898.	Increase or Decrease.
Wood pulp ...	£179,663	£157,058	— £22,605
Esparto	78,765	72,577	— 6,188
Rags	26,857	16,777	— 10,080

The total quantity of wood pulp imported last month was 32,201 tons, a decrease of 5,834 tons, compared with January, 1897; the receipts of esparto amounted to 18,378 tons, a falling off of 893 tons; and the arrivals of rags reached 1,811 tons, a reduction of 1,017.

* * *

Classification of Wood Pulp Imports.

We have frequently urged upon the authorities responsible for the official compilation of the imports of wood pulp the desirability of an improved classification showing the arrivals of chemical wood pulp distinct from those of mechanical wood pulp. It has been customary for all imports to be totalled together, but in future the Board of Trade Returns will deal with chemical and mechanical wood pulps separately. We would have liked to have seen a further improvement in the inclusion of a list of the principal countries, for instance Norway, Sweden, Canada, and the United States, from whence British mills derive their supplies. At present Norway is the only country mentioned. True, that country exports about 62 per cent of the British requirements of wood pulp, but there is no reason why Sweden should be excluded, especially as the shipments reach about 29 per cent. of the total British imports. If Norway and Sweden were both mentioned a fair idea would be obtained as to the American and Canadian developments, under "other countries," although it would certainly be a valuable feature if the imports both from the United States and Canada were distinctly specified. Taking January figures, we find that 7,685 tons of chemical wood pulp, of the value of £48,553, were received from Norway, and 4,564 tons, of the value of £35,295, from other countries. In the first instance the average price per ton is £6 6s. 10d., and in the second case, £7 14s. 8d. The imports of mechanical last month were 12,120 tons, of the value of £32,574, from Norway, and 7,832 tons, of the value of £40,636, from other countries, the average price per ton of the former being £2 13s. 9d., and of the latter, £5 3s. 9d.

SALES BY AUCTION.

Re THE WEST LONDON PAPER MILL CO., LTD.

By Order of the Liquidator, Arthur B. Russell, Esq., Chartered Accountant

Messrs. Fuller, Horsey, Sons & Cassell

Will Offer for

SALE BY AUCTION,

IN ONE LOT, ON THE PREMISES, ON

TUESDAY, MARCH 8th,

At 11 o'clock Precisely, the Valuable Leasehold Property known as

THE WEST LONDON PAPER MILLS,

Lots-road, Chelsea, having a Frontage to the West Kensington Canal of 119 feet, a frontage to Lots-road of 100 feet, and occupying a Ground Area of about 1,920 square yards. In the first instance the Plant and Machinery (both fixed and loose) will be included in the purchase, but, if not then sold, the Lease will be offered separately, and immediately afterwards the Machinery in lots in detail, as per separate Catalogue.

Particulars and Orders to View may be had of the Liquidator, Arthur B. Russell, Esq., 11, Ludgate-hill, E.C., of Messrs. Swann and Co., Solicitors, 38, Chancery-lane, W.C., and of the Auctioneers, 11, Billiter-square, E.C.

To PAPERMAKERS, ENGINEERS, & OTHERS.

Messrs. Fuller, Horsey, Sons & Cassell

Will (unless previously disposed of as a whole)

SELL IN LOTS

at the WEST LONDON PAPER MILL, LOTS ROAD, CHELSEA, on

TUESDAY, MARCH 8th,

At 11 o'clock Precisely,

PAPERMAKING PLANT & MACHINERY

Including an 80-inch Papermaking Machine, with 9 Drying cylinders and Glazing Rolls, Slitting and Cutting Machine, 7 Washing and Beating Engines, Stuff and Vacuum Pumps, Stuff Chests, numerous Tanks, horizontal Machine Engine, 2 Revolving Rag Boilers, Rag Chopper, Dusting Machines, Conveyors and Elevators, Kollergang, 2 60-inch Fans, Centrifugal Pulsometer, Worthington and other Pumps, Compound Condensing Tandem Engine, vertical high-speed ditto, 4 (120-lbs. w.p.) Multitubular Boilers, a 6-ton Weighbridge, quantity of Papermaking Material, and numerous other Effects.

May be Viewed by orders, and Catalogues had as in preceding advertisement.

British and Colonial Printer and Stationer

PUBLISHED EVERY THURSDAY

A Weekly Illustrated Journal of Home, Colonial, and Foreign Printing and Stationery Trade Intelligence, Mechanical and other Inventions Illustrated, Books and Book Manufacture, Patents, Gazette, and Financial News.

An Excellent Medium
For Papermakers to Keep
Their Makes Before Buyers.

SUBSCRIPTION: Inland, 10/- per Annum.
Foreign and Colonial 12/- per annum

W. JOHN STONHILL, 58, Shoe Lane, LONDON, E.C.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester, Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams.

Telegrams—"STONHILL, LONDON."

CHEMICALS.—There is more demand for the home market. CAUSTIC SODA is firm and quotations are slightly higher. SODA ASH is unchanged, Ammonia 58 per cent. being quoted at £4 5s., Carbonated 58 per cent. £4 10s., and Caustic 57-58 per cent. £4 15s. BLEACHING POWDER is steady at £5 2s. 6d. to £5 5s. for soft wood, and £6 to £6 5s. for hard wood f.o.b. Liverpool. SODA CRYSTALS are scarce at £2 17s. 6d. RECOVERED SULPHUR stands at £4 10s. to £5. In SULPHATE OF ALUMINA and BLANC FIXE there is no change.

Alum (Ground), tierces ...	f.o.b. Liverpool	2½%	5	5	0
,, ,, barrels ...	,, ,,	2½%	5	15	0
,, ,, tierces ...	,, Hull	2½%	5	2	6
,, ,, ,, ...	Goole	2½%	5	2	6
,, ,, ...	f.o.b. Glasgow	2½%	5	2	6
Alum Lump) ,, ...	f.o.b. Liverpool	2½%	4	12	6
,, ,, barrels ...	,, ,,	2½%	4	15	0
,, ,, tierces ...	,, Hull	2½%	4	12	6
,, ,, ,, ...	Goole	2½%	4	12	6
,, ,, ,, ...	London	2½%	5	2	6
,, ,, ,, ...	f.a.s. Glasgow	2½%	4	17	6
Alumina Sulphate ...	f.o.b. Tyne	net	3	11	3
Aluminoferric Cake, slabs	Liverpool ...	...	2	15	0
,, ,, tierces	,, ...	...	3	2	6
Alumina Cake, ... slabs	Glasgow ...	...	2	10	0
Blanc Fixe	f.o.b. Tyne	net	6	17	6
Bleach, ...	,, ,,	net	6	0	0
,, (soft wood) ...	f.o.r. Lancs.	net	5	5	0
,, (hard wood) ...	f.o.b. Liverpool	net	6	0	0
,, (soft wood) ...	landed London	net	6	12	6
Borax (crystals)	... ...	net	14	10	0
,, powdered	... ...	net	15	0	0
Chloride of Barium ...	f.o.b. Tyne	net	6	15	0
Caustic White 76% ...	f.o.b. Liverpool	net	8	15	0
,, 74% ...	,, ,,	net	8	10	0
,, 70% ...	,, ,,	net	7	10	0
,, 70% ...	f.o.r. Lancs.,	net	7	7	6
,, 60% ...	f.o.b. Liverpool	net	6	10	0
Caustic Cream, 60% ...	f.o.r. Lancs.	net	5	15	0
,, 60% ...	f.o.b. Liverpool	net	5	17	6
,, Bottoms 60-62% ...	f.o.r. Lancs	net	4	6	0
Soda Ash, Carbonated 58%	f.o.b. Liverpool	net	4	12	6
,, ,, 48%	,,	net	4	7	6
,, ,, 58%	f.o.r. Widnes	net	4	10	0
,, ,, 48%	,, ,,	net	4	5	0
,, Ammonia 58%	f.o.b. Liverpool		4	5	0
,, ,, 48%	,,		4	0	0
,, Caustic 48%	,,		4	12	6
,, ,, 57-58%	,,		4	17	6
Hypo-Sulphite of Soda...	f.o.r Tyne 10 ton lots		4	15	0
,, 10-ton lots	ex ship Liverp'l	net	5	5	0
Oxalic Acid	f.o.b. Liverpool	3½%	per lb		0
Salt Cake	on rail, in bulk		1	2	0
Sal Ammonia (1sts) ...	f.o.b. Liverpool		35	0	0
,, (2nds) ...	,,		33	0	0
Soda Crystals	f.o.b. Tyne	net	2	15	0
,, ,, ...	ex ship Thames	2½%	2	15	0
,, ,, ...	f.o.b. Liverpool	5%	2	17	3
Sulphur, roll	f.a.s. works	2½%	6	5	0
,, flowers	,, ,,	2½%	7	5	0
,, recovered ...	,, ,,	2½%	5	0	0
Sulphate of Ammonia ,,	,, ,,	2½%	10	0	0
,, of Copper ...	,, Liverpool	5%	16	10	0

FOREIGN.—f.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks ...	5	0	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn	3	15	0
Blanc Fixe (c.i.f. London)	7	0	0
White Sugar of Lead	24	0	0
Zinc Oxide	18	5	0
Bleaching Powder	5	15	0

ESPARTO.—A large business has been carried through in African esparto at the modified prices quoted by sellers, some of whom are beginning to pause before committing themselves to further engagements. Spanish also in demand both for early and late shipment. Prices are firm and higher.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—	Fair to Good	£4	10	0	to 4	17	6
,,	Fine to Best	5	5	0	,, 5	10	0
Oran—	Fair to Good	2	17	6	,, 3	0	0
,,	First Quality	3	1	3	,, 3	2	6
Tripoli—	Hand-picked	2	18	9	,, 3	1	3
,,	Fair Average	2	15	0	,, 2	16	3
Bona & Philippeville	... ...	3	3	9	,, 3	6	9

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
754 tons	Alicante	Morris and Co	Granton
857 ,,	Almeria	,,	Tayford
375 ,,	Oran	,,	Granton
515 ,,	,,	,,	Grangemouth
3202 bales	Tripoli		Liverpool

CHEMICAL WOOD PULPS.—There is very little change in the market for Chemical Wood Pulps. Scandinavian makers of SULPHITE are firm, but owing to a few cheap American parcels being pushed on the market prices are rather easier. It is reported that the cheap lots of American pulp comprise damaged qualities. The Scandinavians, however, are giving more consideration to American and Canadian competition. It now seems that a good steady business has been established in the shipment of Trans-Atlantic pulp to this country, and lately several thousand tons of both chemical and mechanical have been received. SODA pulps keep firm.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8	12	6	to 9	0	0
,, Superior ,, ...	9	5	0	,, 9	10	0
,, Bleached, ...	11	10	0	,, 15	0	0
SODA, Unbleached, Common ...	8	5	0	,, 8	10	0
,, Extra...	8	15	0	,, 9	5	0
,, Bleached	10	10	0	,, 12	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.25	to	25.
,, Bleached	31.	,,	36
SODA, Unbleached	21.	,,	24.
,, Bleached	28.	,,	30.
SULPHATE, Unbleached	21.	,,	24.
,, Bleached	28.	,,	30.

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached ...	1.62	to	2
,, SODA Bleached ...	1.70		2
FOREIGN SODA, Unbleached	2.15		2.10
,, Bleached	2.70		2.80c.
,, SULPHITE, Unbleached ...	2.30	,,	2.75c.
,, ,, Bleached... ...	3.25	,,	3.30c.

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MECHANICAL WOOD PULPS.—Advices from Christiania state that the wood pulp market is rather weak, the cause being attributed to mild weather which has allowed production to go on without interruption. More pulp has lately been offered, but consumers hold off from buying. The production of most of the large mills, however, is reported to be well sold ahead and no material drop in prices is anticipated.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£6 10	0
Pine, Dry	£4 5 0 to 4 12	6
,, Moist	3 3 6 ,, 3 7	6
Brown, Dry	4 15	0
,, Moist	3 10	0

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt

Pine Pulp, 50% moisture, ordinary	Frs. 12.50 to 13.
,, ,, fine	13. ,, 13.50
,, dry, ordinary	11.50 ,, 12.
,, ,, fine	12.50 ,, 13.
Aspen, ,, ,,	16. ,, 18.
Half-Chemical Brown, 50% moisture	12.50 ,, 13.
,, ,, dry	12.50 ,, 13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
6200 bales	Drammen	E. Lloyd	London
420 ,,	Hambro		,,
23 cases	Philadelphia		,,
497 bales	Rotterdam		,,
1225 ,,	Boston		,,
200 ,,	Ostend		,,
2151 ,,	St. John's		,,
102 ,,	Stettin		,,
320 ,,	Christiania	Christophersen & Co	,,
200 ,,	,,	Johnsen & Co	,,
1656 ,,	Antwerp		,,
446 ,,	Ghent		,,
500 ,,	Gothenburg	Tough and Henderson	,,
120 ,,	,,	Taylor and Co	,,
113 ,,	,,	Green and Co	,,
77 ,,	,,	Spicer and Son	,,
39 ,,	,,	R. L. Lundgren	,,
170 ,,	,,	Ronaldson and Co	,,
174 ,,	Rotterdam		,,
522 rolls	St. John's	Thin and Sinclair	,,
867 bales	Portland, Me.		Liverpool
122 ,,	Dunkirk		,,
23 brls.	New York		,,
1502 bales	Christiania		Hull
300 ,,	Trieste		,,
62 ,,	Hango		,,
252 rolls	New York		Manchester
400 bales	Fiume		,,
98 rolls	Rotterdam		,,
23 bales	,,		,,
2780 ,,	Christiania		,,
570 ,,	Drammen		,,
1056 ,,	Skein		,,
1800 ,,	Christiansand		,,
213 ,,	Gothenburg		Grimsby
850 ,,	Christiania		Grangemouth
1202 ,,	St. John's		Glasgow
322 ,,	Gothenburg		Granton
3712 ,,	Helgenas		Preston
81 ,,	Hambro		Leith
73 ,,	Rotterdam		,,
100 ,,	Antwerp		Harwich

Totals of Wood Pulp from Each Country:

AUSTRIA ...	762 bales	HOLLAND ...	767 bales
BELGIUM ...	2402 ,,	,, ...	98 rolls
CANADA ...	3353 ,,	NORWAY ...	15088 bales
,, ...	522 rolls	SWEDEN ..	5256 ,,
FRANCE ...	122 bales	U.S.A.	2092 ,,
,, ...	23 brls.	,, ...	23 cases
GERMANY ...	603 bales	,, ...	2 2 rolls

STRAW PULPS.—Prices:

Prices, c.i.f. London, Hull or Leith

German, dry. No. 1	£14 0 0
,, No. 2	£13 0 0

FOREIGN RAGS.—The demand for French rags continues good. German packers complain that business is dull, especially in shipments to the United States. Arrivals at British ports during the week were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
193	Ghent	Hull	94	Amsterdam	Goole
213	Copenhagen	,,	46	Hambro	Grimsby
101	Konigsberg	,,	17	Rotterdam	,,
78	Stettin	,,	135	Antwerp	,,
16	Amsterdam	,,	5	Amsterdam	Grgmth
30	Sydney	,,	145	Alexandria	Liverpl
40	Bordeaux	,,	48	Buenos Ayres	,,
41	Stettin	London	153	St. Nazaire	,,
8	Rotterdam	,,	147	Bordeaux	,,
164	Rouen	,,	16	Barcelona	,,
10	Venice	,,	24	Jersey	Southampton
82	Ghent	,,	3	Guernsey	,,
35	Gothenburg	,,	19	St. Malo	,,
100	Boulogne	Goole	64	Hambro	Leith
33	Antwerp	,,	19	Stettin	,,
50	Ghen	,,	422	Ghent	,,
52	Hamburg	,,	22	Amsterdam	,,
881	St. Brieux	,,	97	St. Nazaire	Newhvn

Totals from Each Country:

ARGENTINE	48 bales	FRANCE ...	1601 bales
AUSTRALIA	30 ,,	GERMANY ...	300 ,,
BELGIUM ...	915 ,,	HOLLAND ...	162 ,,
CHANNEL Isles	27 ,,	PRUSSIA ...	101 ,,
DENMARK ...	213 ,,	SWEDEN ...	35 ,,
EGYPT	145 ,,	SPAIN ...	26 ,,

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool); 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope (coils)	8/0	Not free from wood	5/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	10/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No 1 6/0; No. 11	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	8/0
SPF	11/0	CSPFFF	14/0
FF	8/0	CSPFF	10/0
FG	8/6	CFB (Blue)	6/0
FFX	7/0	CFX (Coloured) ...	4/0

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6; Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/6.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linen	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cuttings	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

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FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Blue Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ...	3/6	,, Stay ,,	15/0

PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF ,, ...	12/6	Jute I	3/0
FG	10/0	,, II... ,, ...	2/6
LFB	8/0	Rope I... ... ,,	8/0
FF	5/6	,, II ...	6/0

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	2nd Canvas ...	7/0
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/0

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* At Smyrna and Salonica.

HOME RAGS.—LONDON: A fair business is reported; prices are unchanged.—BRISTOL: Good demand.—MANCHESTER: The market quiet but prices are firm; stocks on hand are not heavy.—EDINBURGH and GLASGOW: There is a fairly good demand.—DUBLIN: Business quiet.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/0
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected) ...	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/0	Gunny	2/0-2/3

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	2/6-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/6
Outshots	12/0	W. Manilla Rope ...	7/0
Mixed Fines...	14/0	Tarred Manilla Rope	5/9
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Canvas (best)	15/0	Bagging...	2/3
2nd	8/	,, (clean) ...	3/0-4/0

GLASGOW.

Fines	12/6-16/0	Canvas No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues	3/3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	9/0

DUBLIN.

White Cuttings ...	16/0	Mill Bagging	
Fines	9/0	White Manilla ...	6/
Seconds	3/6	Tarred Hemp	6/
Light Prints	2/6	Rigging	10/
Black do.	1/6	Mixed Ropes ...	

STRAW.—Prices:

Oat Straw, ...	c.i.f. London	42/0	f.o.r. Goole,		42/0
Wheat ,, ...	do.	44/0;	do.		40/
Rye ,, ...	do.	57/6;	do		57

WASTE PAPERS.—Moderate demand.

Cream Shavings ...	10/0	Small Letters ...	3/0
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/3
White Printings ...	7/0	Light Browns	3/0
White Waste ...	1/9	Dark ,, ...	2/0
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/6
Blue Paper	2/0	Strawboard Cuttings	1/3
Crushed News	2/0	Jacquards	2/0

For Export: 2s/- per ton extra.

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common ...	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections ...	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings ...	£3 0 to £4 0

STARCH.—Maize is rather easier, Crisp being quoted at £9 15s. Other qualities are unchanged.

F.o.r. London, less 2½%

Maize—Crisp, £9 15/-; Pearl, £6 5/-; Powder, £6 15/-; Special £14.

Farina—Prime, £10; B.K.M.F., £13 10/-.

Delivered, less 2½%:

Rice—Special (in chests), £20 0/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£15

SIZING.—Market very firm and stocks low. Raw material has advanced 33 per cent. in price and contracts for the year have been fixed at that advance. It is anticipated that higher prices will rule for glues and sizing, and makers have already issued circulars to that effect. The outlook seems to point to very high prices and a scarcity of glue, etc.

English Gelatines per cwt.	90/0	to	120/0
Foreign ,, ...	70/0	,,	100/0
Fine Scotch Glues	45/0	,,	60/0
Long Scotch Glues	35/0	,,	40/0
Common Black ,, ...	25/0	,,	28/0
"Town" Glues	38/0	,,	45/0
"Bone" Glues	26/0	,,	30/0
Foreign Glues	28/0	,,	35/0
Bone Size	5/6	,,	10/0
Gelatine Size	6/6	,,	10/0
Dry B.A. Pieces	50/0	,,	55/0
,, English Pieces	35/0	,,	45/0
Wet ,, ,, ...	8/6	,,	9/0
,, Sheep Pieces	3/0	,,	4/0
Buffalo Hide Shavings	32/0	,,	40/0
,, Picker Waste	32/0	,,	35/0

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4/9	5/-	5/3	5/4½	5/6	6/-	6/3	6/9	7/-	8/-	9/-

COLOURS.—Trade quiet; quotations are nominally as under:

Mineral Black ...	cwt.	3/6	PASTE COLOURS with
do. superior ...	,,	4/0	60% of colour, as follows
Pure Ivory Black	,,	12/0	Orange Pulp ... cwt. 40/0
Ochre	,,	2/3	Golden Yellow Pulp 30/0
French J. C. Ochre	ton	60/0	Lemon ,, ,, cwt. 30/0
Chrome (pure) ...	cwt.	40/0	Prussian Yellow ,, 36/0
Red Oxide	,,	4/6	Green (free of arsenic 26/0
Umber, Devonshire	,,	50/0	Paste Blue, 20% ... 18/0
do. Turkish ...	,,	40/0	,, 33%; 26/0; 45% 45/0
Lamp Black ...	,,	5/0-7/6	Imperial Yellow (dry) 16/0
Ultramarine (pure)		35/0-45/0	(less 2½% d/d)
Cochineal	lb.	4/9-2/0	

METALS.—LONDON: COPPER quiet; prices easier; TIN firmer; LEAD dull. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	49	2	6	49	7	6
,, three months	49	8	9	49	13	9
Tough	51	10	0	51	15	0
Best selected	52	0	0	52	17	6
Strong Sheets	59	0	0			
TIN—						
Fine foreign, cash	63	6	3	63	16	3
,, three months	63	17	6	£4	7	6
LEAD—						
Spanish...				12	6	3
English...				12	10	0

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MINERALS.—The trade in CHINA CLAY, FRENCH CHALK and TERRA ALBA is very dull and stocks are accumulating; prices, however, remain about the same. FRENCH and ITALIAN CHALKS are easier in price. There is a steady demand for SNOWDRIFT.

Mineral White (also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine...	...	28/0 less 2½ %; del. Lancashire...		38/0
Pottery Super.	24/0	,,	,, ...	34/0
Ball Seconds ...	20/0	,,	,, ...	30/
Seconds	15/0	,,	,, ...	25/0
Thirds	11/0	,,	,, ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/0 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 60/0, 66/0, 73/6, and 77/6 per ton, according to quality, less 2½ %.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool, I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 12/6 per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-.

Patent Hardening (2 ton lots) f.o.r. Lancs., £35/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.

Magnesite (in lump) 39/6 to 46/0 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.

Bauxite, minimum alumina, 60 %, 15/9 f.o.b.

Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.

Satinite, £3 to £3 6s. 0d., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/6 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0.

LIME.—The present price is 10/6 per ton f.o.r

BALING TWINE.—Prices:

		Thick.	Medium.	Fine
Hemp	...	4d. per lb.	4½d. per lb	5d. per
Mixed	...	3½d. ..	4d. ,,	4½d. ,

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American Sulphite in England.

Shipments of Damaged Pulp Alleged to Have Upset the Market.

Several exporters of American sulphite to Great Britain have been greatly exercised of late owing to a fall in prices, in some cases amounting to 20s.

According to the *Paper Trade Journal*, several of the export houses of New York started lines of inquiry, which disclosed the fact that there was being offered for sale on the English market about 1,000 tons of sulphite pulp at £8 2s. 6d. per ton, delivered, as against £9 5s. to £9 10s., the price formerly ruling. It was also ascertained that this pulp was damaged, and that the consignor was an American mill which was anxious to dispose of the pulp.

Various American exporters very properly became indignant, and wrote to their English correspondents that the shipment in question must certainly not be confused with the article they were shipping, and that English papermakers should be warned not to buy it for clean, undamaged pulp, for if they did they would find that it was otherwise. They said that any such representations which might be made on the part of the English agent who was handling the pulp and negotiating for its sale were misleading, as it was impossible to put the best American sulphite down in England at the price mentioned.

It was found that three consignments had been received in England, as follows:—Manchester, 500 tons; Liverpool, 500 tons; London, 200 tons. The 500 tons received at Manchester were shipped from the port of New York by the steamer Nasmyth on December 11th, 1897. It appeared that this shipment had been made for the Eastern Manufacturing Co., of South Brewer, Me., by Busk and Jevons, ship brokers and agents of the line which owns the Nasmyth. One of the bales which had been left behind was identified as being a part of a damaged lot of pulp seen in a storehouse of the Eastern Manufacturing Co., at South Brewer, Me.

Alkali and Bleach.

British Exports During January.

The following statistics, taken from the official returns, show the quantity and value of alkali and bleaching materials shipped to the countries mentioned for the month of January and for the corresponding month of last year:—

ALKALI.

Country.	Quantity.		Value.	
	1897.	1898.	1897.	1898.
Quantity ...	Cwts.	Cwts.	£	£
Russia	3,506	6,355	1,161	2,056
Sweden & Norway	2,441	8,101	458	1,839
Germany	4,547	7,876	1,185	1,640
Holland	8,745	9,669	2,127	1,841
France	2,846	6,922	947	2,358
Spain & Canaries...	27,455	26,799	10,001	9,061
Italy...	15,517	18,970	3,661	5,522
United States ...	177,239	109,537	38,266	21,313
Australasia ...	9,852	17,014	2,569	5,526
B. N. America ...	4,789	6,041	1,319	1,501
Other Countries ...	72,867	119,447	20,795	33,788
Totals ...	327,804	336,731	82,489	86,445

BLEACHING POWDER, &c.

Quantity	Cwts.	Cwts.	£	£
United States ...	63,613	63,059	20,452	17,979
Other Countries ...	30,490	24,904	10,113	8,277
Totals ...	94,103	87,963	30,565	26,256

NEW PATENTS.

APPLICATIONS.

1,995.—Improvements in bed plates for beating engines. F. H. Maxfield and E. W. Lovejoy.

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SWEDEN.

FROVIFORS PAPPERSBRUK, FROVI.—The Frovifors Paper Mills, formerly owned by Messrs. Uggla and Co., have been purchased by Messrs. S. Berglund and Co., the owners of Ohs and Habo Mills. Although the mills were only acquired at the beginning of the year, work is now in full swing, thanks to the energy of Mr. James E. Fielding, who has been superintending the arrangements. The paper mill was idle for a period of about 2½ years. Mr. Fielding was formerly manager at Emfors Paper and Pulp Mills, but for the past year he has been in the service of Mr. Berglund, at Ohs Mills, where a new paper mill has been erected. At Frovi there is an excellent water-power, and there is a railway station close by. Common papers are being made at present, but it is the intention later on to produce grease proof papers from sulphite.

FRANCE.

THE 3-machine board mill of MM. Lourdelet-Maricot and Co., Aubervilliers, Seine, has just been turned into a limited company with a capital of £100,000.

GERMANY.

THE CHARLOTTENBURG TECHNICAL OFFICES.—A Bill has been brought before the German Parliament with the view of extending the work of these offices—already possessing a branch for paper testing—to the whole Empire. It is pointed out that the work has been so successful that it is desirable to give the whole Empire the opportunity of availing itself of official tests. When papers made from cheaper and less durable materials were first introduced, the Government of Prince Bismarck found the means at once for establishing an office for Prussia. The Prince saw from the first the enormous advantages arising to the Empire if the Imperial authorities would have taken the matter up. Since then much experience has been gained in the art of testing, and the dangers of the old state of things have been so clearly demonstrated that the Bill has every prospect of being favourably supported.

EXPORTS OF PAPER HANGINGS.—The exports of paper hangings last month amounted to 7,361 cwts., of the value of £19,008. The quantity for the corresponding month of last year was 6,968 cwts., of the value of £17,529, and in January, 1896, 6,481 cwts., of the value of £16,640.

British Imports & Exports of Rags.

There was a heavy drop in the imports of rags last month, compared with January, 1897, the falling off in quantity amounting to 1,017 tons, and in value £10,080. The following are the total imports of rags during January of this and the two preceding years:—

TOTAL IMPORTS.

January,	1898	1,811 tons	£16,777
,,	1897	2,828 ,,	26,857
,,	1896	1,748 ,,	17,876

The exports of rags also declined last month, compared with the corresponding month of 1897, the reduction amounting to 705 tons, and the value to £4,498.

TOTAL EXPORTS.

January,	1898	4,003 tons	£18,008
,,	1897	4,708 ,,	22,506
,,	1896	4,269 ,,	25,667

SEIZURE OF AMERICAN PAPER.—An advice from Niagara Falls states that the Canadian customs authorities have seized a carload of paper from the Otis Falls Paper Company, of Otis Falls, Me., consigned to its Toronto agent, Mr. Chism, because of alleged undervaluation. For a long time past the paper manufacturers of Canada have been receiving two and a half cents a pound for their product, while American paper has been sold for two cents a pound to 2.10 dols. per hundred. Since the seizure Mr. Chism has increased his valuation figure to 1.75 dols. per hundred, and the Government is considering whether it will release the paper at that figure or hold it for still higher valuation.

WOOD PULP FOR GREAT BRITAIN.—The Manufacturing Investment Company, of Madison, Me., have arranged to ship two sample orders of about twenty-five tons each of their best pulp to Newcastle and Leith, as an opening wedge to the markets of the United Kingdom.

LEATHER PULP.—Leather is in its ordinary state fibrous, but these fibres cannot be laid bare either chemically or mechanically. The fibres of leather are lost or embedded in its adhesive substance and it would not be easy to separate them from it. A process has been patented in this country by a French manufacturer, which deals with preparing leather waste by soaking, washing, stretching, fulling and converting it into pulp, which is termed Fibroleum. It is claimed that the texture of leather is completely transformed; the leather is softened and treated so that the adhesive substances surrounding the natural fibres are stretched into artificial fibres, then reduced to a pulp, this latter being mixed or not with a certain quantity of textile fibres without any addition of glue. In order, however, to make the pulp waterproof, aluminated colophonium (rosin) may be added to it, then the pulp is subjected to a series of well-known operations in order to transform it into sheets of different thicknesses and of any desired dimensions.

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A. WERTHEIM & Co.,

HAMBURG,

SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	310	53	—
BELGIUM	1752	—	—
CHANNEL ISLES ...	22	—	—
DENMARK...	107	—	—
FRANCE	1632	14	—
FINLAND	126	—	—
GERMANY	2645	13	—
HOLLAND	33174	—	44
JAPAN	42	—	—
NORWAY	3496	—	44
SPAIN...	102	—	—
SWEDEN	5173	—	390
U.S.A....	5052	263	176

Including the Following:—

Quantit	From	Importer	Port
40 cases	Boston	B. Galloway	London
9 ,,	,,	Hunt, Fourdrinier & Co	,,
56 bales	Christiania	Alsing & Co	Grangemouth
57 ,,	,,	Green & Co	London
286 ,,	,,	Crabb & Co	,,
403 ,,	,,	Saunders & Son	,,
25 ,,	,,	Felber & Co	,,
63 ,,	,,	Cookson & Co	,,
82 ,,	,,	C. Morgan & Co	,,
8 ,,	,,	Becker & Wagner	,,
100 ,,	,,	Partington	,,
70 ,,	,,	Alsing & Co	,,
356 ,,	,,	L. Henle	,,
51 ,,	,,	J. Hamilton	,,
14 ,,	,,	Davidson & Co	,,
2 ,,	,,	E. Lloyd	,,
24 ,,	,,	Brown & Brough	,,
34 ,,	,,	Becker & Co	,,
12 ,,	,,	Burnell & Co	,,
9 ,,	Christiansand	Puckert	,,
13 ,,	,,	Whiting	,,
41 ,,	,,	C. Morgan & Co	,,
22 ,,	,,	Burell & Co	,,
55 ,,	,,	Crabb & Co	,,
57 ,,	,,	W. Guppy	,,
25 ,,	,,	Becker & Wagner	,,
9 ,,	Gothenburg	E. E. Sabel	,,
281 ,,	,,	Schenkenwald & Co	,,
31 ,,	,,	Becker & Wagner	,,
122 ,,	,,	J. Eberstein	,,
140 ,,	,,	Schenkenwald	,,
909 ,,	,,	Skarblacka	,,
25 ,,	,,	E. Lloyd	,,
35 ,,	,,	J. Hamilton	,,
40 ,,	,,	Spicer & Son	,,
133 ,,	,,	R. L. Lundgren	,,
11 ,,	,,	C. Morgan & Co	,,
35 ,,	,,	Clayton & Co	,,
5 ,,	,,	Brough & Co	,,
54 ,,	,,	E. Saunders	,,
25 ,,	,,	Lockwood	,,
20 ,,	,,	Tegner & Co	,,
16 ,,	Libau	E. Byne & Co	,,
17 ,,	New York	Wyckoff & Co	Southampton
3 ,,	,,	C. D. Thayer	,,
165 ,,	,,	Schenkenwald & Co	London
71 ,,	,,	Lepard & Smith	,,
104 ,,	Trieste	Schenker & Co	,,
98 ,,	,,	P. Sabel	,,
375 rolls	Uddevalla	D. Gulland	,,
15 ,,	,,	A. L. Lundgren	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALIA	3627	674	848
AFRICA	22	44	7
ARGENTINE	24	396	55
B. W. INDIES	60	25	—
BELGIUM	21	8	36
CAPE COLONY	—	—	20
CHINA	42	183	236
CHANNEL ISLES ...	—	—	14
DENMARK	—	4	44
FRANCE	172	—	—
GERMANY	4	—	15
GIBRALTAR	—	—	25
HOLLAND	24	—	20
ITALY	—	1	—
INDIA	390	185	34
JAPAN	960	17	—
MAURITIUS	—	2	—
NEW ZEALAND ...	734	208	317
PORTUGAL	—	6	—
SPAIN...	—	7	—
S. AMERICA	—	—	2
SWEDEN	—	—	8
U.S.A....	—	—	31
W. INDIES...	65	16	110

FROM GLASGOW.

	Printings. Cwts.	Writing. Cwts.	Various. Cwts.
CANADA	—	24	30
CAPE COLONY	—	—	27
CHILI	—	81	—
FRANCE	—	—	15
NEW ZEALAND ...	—	—	46
SPAIN...	—	—	44

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

1529	b	Rotterdam	London	1600	b	Cologne	London
791	,,	,,	,,				

MILLBOARDS.

4456	b	Amsterdam,	Hull

WOOD PULP BOARDS.

400	b	Hambro	Hull	492	b	N. York	Manchester
25	c	Christiania	,,	5	c	Christiania	Grngmth

PASTEBOARDS.

217	b	N. York	Manchester	57	b	Hambro	London
205	,,	Antwerp	,,	2	,,	Dunkirk	Leith
31	,,	Malmo	Grimsby	40	,,	Harlingen	,,
160	,,	New York	London	125	,,	Trieste	Hull
415	,,	Trieste	,,	188	,,	Hango	,,

b—bales. c—cases. r—rolls. cr—crates.

THE MILL HAND EDITION OF THIS JOURNAL

IS NOW SUPPLIED TO

Bona-Fide Employes in Paper Mills (only)

At the Rate of *6s. 6d. PER ANNUM*, Post Free, Payable in Advance; or *3s. 3d.* for *SIX MONTHS*.

Foreign Postage ½d. extra per Copy.

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SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries.

OFFICES—58, SHOE LANE, LONDON, E.C.

Situations Vacant.

FIRST CLASS Guillotine CUTTERMAN Wanted at once.—Smith, Stone and Knight, Ltd., Cattle's-grove, Birmingham. 7203

TO BOARD MAKERS.—Wanted, a Machine man for making leather boards from strong materials.—Address, stating wages required, No. 7,207, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7207

WANTED, an Experienced Head ENGINEER for a Paper Mill; he must be competent to take charge of the whole of the Papermaking Machinery, and must have a thorough knowledge of steam engines and boilers.—All particulars, stating age, previous experience, and wages required, should be sent to Box 260, T. B., Browne's Advertising Offices, 163, Queen Victoria-street, London, E.C. 7204

Situations Wanted.

ADVERTISER (28), with about 10 years' experience in makers' and agents' London offices, seeks agency, or London engagement where industry, conscientiousness, and business aptitude, would meet with a reasonable reward.—Address, No. 7,181, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7181

Machinery.

FOR SALE, 4 cast-iron calender rolls, 80-in. wide, 14-in. diameter, with blocks and frames.—Address, No. 7,118, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7118

FOURDRINIER Papermaking Machine, must be strong, modern, and in good order; 80 to 106 inches of paper. Fair price for a good machine.—Address, K., No. 7,202, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C.

FOR SALE.—One Nearly New Paper Roll, 12-in. diam. by 8-ft. 1-in. wide on paper. Pair of Stuff and Water Pumps, complete. Two Rope Pulleys, 3-ft. 9-in. diam., for two and four 1¼ in. ropes.—Full particulars from James E. Smith, Paper Mill Engineer, 50, Ash-street, Southport. 7205

Miscellaneous.

CAPITAL at 5 per cent. per annum can be obtained by established firms.—"Bank," care of Emmison's Advertising Offices, Manchester. 6943

FOR SALE.—Copies of the *World's Paper Trade Review*, from July 1st, 1894, to June 30th, 1895; handsomely bound in 2 vols., half-calf, with cloth sides and gilt lettered on back; condition as new; 10s. the two; a bargain. Also copies of vol. 2 of the *British and Colonial Printer and Stationer*, July to December, 1879, bound; 2s. 6d. each to clear, binding costs more. Contains the first six Nos. of the *Paper Trade Review*.—Address, No. 10665, office of the BRITISH AND COLONIAL PRINTER AND STATIONER, 58, Shoe-lane, London, E.C. 10665

PARTNERSHIP.—Wanted, by experienced and energetic papermaker, Partnership in sound concern, or responsible position with a view to same.—Address, No. 7,195, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7,195

PAPERMAKER with long experience in tub-sized writings and fine printings, having excellent connections with the trade, desires Managing Partnership, or entire control of a good mill. Would represent a suitable mill in London.—Address, No. 7,206, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7206

TO BE LET or SOLD cheap, Freehold Paper Mill in the West of England, alongside deep water quay, with cheap carriage by steamer or rail; water power and steam. To be disposed of on account of owner's health.—Address, No. 7,180, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7180

WATER SUPPLIES
NORTON'S PATENT
Abyssinian and Artesian Tube Wells.
LE GRAND & SUTCLIFF,
Hydraulic Engineers,
Magdala Works, Bunhill Row, London

REDUCED PRICE 2/6 EACH.

50 Years' Experience in Papermaking

few copies of this book are obtainable at a reduced price on application to the Author
JAS. ROBERTSON, Lintzford, Lintz Green, Co. Durham
or to the Printers,
ANDREW REID & Co., Ltd., Newcastle-on-Tyne.

Directory of German Papermakers,
Wholesale Stationers,
Bookbinders,
Fancy Trades, &c.

The States of the German Empire, Provinces, Towns and Firms are alphabetically arranged, and the specialties of firms classified.

(In the German Language).

PRICE NINE SHILLINGS, NET.

To be obtained of

W. JOHN STONHILL, 58, SHOE LANE, LONDON.

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AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
26 cases	Antwerp	J. W. Hampton	New York
8 ,,	,,	Wagner and Co	,,
17 ,,	,,	Dingelstedt and Co	,,
2 ,,	,,	Hupfeld, Ludecking	Boston
3 ,,	Bremen	Palm Fechteler	New York
1 ,,	,,	Knauth, Nachod & Co	,,
15 ,,	,,	Sheldon and Co	,,
1 ,,	Hamburg	Anthony and Co	,,
10 bales	,,	Knauth, Nachod & Co	,,
11 cases	,,	,,	,,
7 ,,	,,	Stiner and Co	,,
10 bales	,,	Hensel, Bruckmann	,,
26 ,,	,,	Kauth, Nachod & Co	,,
77 ,,	,,	De Jonge and Co	,,
4 ,,	Hull	J. Hunter	,,
30 cases	Havre	American Tobacco Co	,,
21 ,,	,,	Druckleib and Co	,,
1 ,,	London	Sheldon and Co	,,
1 ,,	,,	Wells, Fargo and Co	,,
2 ,,	,,	G. J. Kraft	,,
3 ,,	,,	J. Turkugle	,,
3 ,,	,,	Schall and Co	,,
21 ,,	,,	Dickinson and Co	,,
1 ,,	Liverpool	Anthony and Co	,,
7 ,,	,,	Kupfer Bros	,,
18 bales	,,	Sheldon and Co	,,
3 ,,	,,	Wadsworth, Howland	Boston
36 ,,	,,	Atkins and Co	,,
5 ,,	,,	Dennison Mfg. Co	,,
4 cases	Rotterdam	De Jonge and Co	New York
2 ,,	,,	Anthony and Co	,,
7 ,,	,,	A. Kraut	,,
1 ,,	,,	Sheldon and Co	,,
2 ,,	,,	Dingelstedt and Co	,,

CHEMICAL FIBRE.

15 tons	Hull	F. Bertuch and Co	New York

MANILLAS.

28 bales	Antwerp	J. Pirnie	New York
45 coils	Glasgow	E. P. True	Boston
212 bales	Hull	Lewy Bros	New York
214 ,,	Leith	Jessup and Moore	,,
116 ,,	,,	Perkins, Goodwin	,,
92 ,,	,,	J. B. Small	,,
82 ,,	,,	Train, Smith & Co	New York
233 ,,	Liverpool	,,	Boston
109 ,,	,,	Butterworth and Co	,,
233 coils	,,	Dutton and Co	,,
141 bales	,,	Butterworth & Co	,,
25 ,,	London	Westhorp and Co	,,

RAGS.

380 bales	Antwerp	J. Pirnie	New York
49 ,,	,,	Castle and Gotheil	,,
205 ,,	,,	Train, Smith and Co	,,
1044 ,,	,,	,,	Boston
58 ,,	,,	W. F. Corne	,,
41 ,,	Glasgow	,,	,,
43 ,,	,,	Train, Smith & Co	,,
25 ,,	,,	Dutton and Co	,,
46 ,,	Hamburg	A. Kazenstein	New York
130 ,,	,,	Salomon Bros	,,
145 ,,	Hull	Castle and Gotheil	,,
462 ,,	,,	Train, Smith and Co	,,
54 ,,	,,	Lewy Bros	,,
210 ,,	Leghorn	Castle and Gotheil	,,
5 ,,	London	Jessup & Moore	,,
647 ,,	,,	Train, Smith & Co	Boston
133 ,,	,,	Crocker, Burbank & Co	,,
51 ,,	,,	Wheelwright Paper Co	,,
536 ,,	,,	Butterworth and Co	,,
37 ,,	Liverpool	,,	,,
128 ,,	,,	Warren and Co	,,

WASTE PAPERS.

97 bales	Glasgow	E. P. True	Boston
49 ,,	,,	Butterworth and Co	,,
122 ,,	,,	Crocker, Burbank	,,
36 bales	London	Train, Smith and Co	Boston
255 ,,	,,	Wheelwright Paper Co	,,
55 ,,	,,	Butterworth and Co	,,
48 ,,	,,	Castle and Gotheil	,,

CAUSTIC SODA.

1 cks.	Bremen	Fischer Chemical Co	N. York
100 drums	Liverpool	Hill's Son & Co	Boston

BLEACHING POWDER.

59 cks.	Antwerp	F. A. Reichard	New York
230 ,,	,,	Fuerst Bros	,,
15 ,,	,,	Rice and Co	Boston
71 bdls.	,,	Fuerst Bros	,,
79 ,,	Liverpool	Reed, Halliday & Co	,,
131 ,,	,,	J. L. and D. S. Riker	,,
18 ,,	,,	J. Marble & Co	,,
42 ,,	,,	J. L. & D. S. Riker	New York

SODA ASH.

1600 bgs.	Liverpool	Wing and Evans	New York
20 ,,	,,	J. L. & D. S. Riker	Boston
70 ,,	,,	Warren and Co	,,
188 pkgs.	,,	Wing and Evans	,,
400 bgs.	,,	Morey and Co	,,

SIZING.

273 bales	Antwerp	Baeder, Adamson & Co	Boston
4 bgs.	,,	,,	,,
119 ,,	Liverpool	Butterworth and Co	,,
75 ,,	,,	Groom and Co	,,

ALKALI.

20 bdls.	London	Dillon and Co	Boston

SODA CRYSTALS.

280 bdls.	Liverpool	Warren and Co	Boston

SULPHUR.

334 bgs.	Liverpool	Linder & Meyer	Boston

IT IS WORTH YOUR WHILE TO BUY DIRECT.—The RELIANCE LUBRICATING OIL COMPANY supply on approval "Reliance" high-class NON-CORROSIVE LUBRICANTS, which, through their superiority, have the largest sale in the world. Engine, Cylinder and Machinery Oils, 11½d.; Spindle Oil, 9½d.; Loom Oil, 10½d.; Extra Special Cylinder Oil, 1s. 4d.; Extra Special Engine Oil, 1s. 4d.; Gas Engine and Dynamo Oils, 1s. 6d. per gallon; Light Machine Oil, 10d. Barrels free and carriage paid. Brick Oil, 4d. per gallon. Also Solid and Liquid Oils for all other purposes.—RELIANCE LUBRICATING OIL COMPANY, 19 and 20, Water-lane, Tower-street, London, E.C. Depots at Liverpool, Bristol, Hull, Cardiff, and Glasgow. Telegrams, "Subastral, London." A B C code used. Telephone No. "Avenue," 5,891. 3068

What Is It You Want To Know?

THE COMMERCIAL INTELLIGENCE DEPARTMENT of the ASSOCIATED TRADE and INDUSTRIAL PRESS, WASHINGTON, D.C., U.S.A., nine years established, is prepared to supply business firms and manufacturers throughout the world with Commercial Intelligence and General Information.

No matter what it is you are in a quandary about, no matter in what country, the information is to be obtained, our facilities are such that we can insure satisfactory results at amazingly moderate costs.

Our Agents and Representatives are in every Country, and the class of inquiries embrace Credit Reports, Lists of Dealers, Manufacturers, and Exporters in various lines, Customs Duties, Hotel Charges, Transportation Routes, and such questions as are likely to come up in any modern business house or counting room.

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DIRECTORY.

Names and Addresses under this Heading will be charged for at the rate of 50/- per annum (52 insertions) for each card of two lines or under. Each additional line £1 extra.

ABYSSINIAN TUBE WELLS.

LE GRAND & SUTCLIFF, 125, Bunhill Row, London, E.C. . . . . Artesian Well Engineers.

ARTESIAN WELLS.

ABUNDANT WATER SUPPLIES Co., apply to C. Isler and Co., Bear Lane, Southwark, S.E.

BATCHELOR, Richard D., Artesian and Consulting Well Engineers, 73, Queen Victoria Street London, E.C., and at Chatham.

ISLER, C. & Co., Bear Lane, Southwark, London, S.E.

CHINA CLAY.

ROGERS, J. & Co., Truro, Cornwall.—Agents, W. G. Taylor and Co., Ltd., 83, Queen Victoria Street, London, E.C., and 44s, Lancaster Avenue, Manchester.

W. SINGLETON BIRCH & SONS, Ltd., 15, Upton Street, Manchester. Mines: Rosevear, St. Austell, Cornwall.

COLOURS.

CARDWELL, J. L. & Co., Commercial Buildings, 15, Cross Street, Manchester. Specialties: Mineral Black, Ven. Red, Ochres and Umbers.

HINSHELWOOD, Thomas & Co., The Glasgow Colour Works, Glasgow. Colours and shades matched exactly.

The VIA GELLIA PAINT & COLOUR Co., Cromford, Derbyshire. Colours in every variety. Samples and prices on application. Enquiries solicited.

GLUE, GELATINE, TUB SIZE, &c.

GROVE CHEMICAL Co., Ltd., Appley Bridge, near Wigan, Lancashire.

MINERAL WHITE or TERRA ALBA.

CAFFERATA & Co., Newark-upon-Trent.

HOWE, John & Co., Carlisle.

WINSER & Co., Kegworth Mills, near Derby, and Harter Street, Manchester. Also importers of China Clay.

PULP and PAPER MILL EXPERTS.

C. D'OYLEY MEARS & Co., Wardrobe Chambers, Queen Victoria Street, London, E.C. Experienced Pulp Arbitrators.

STEEL.

MAKIN, Wm. & SONS, Sheffield. Established 1736. Roll Bars, Plates, Cutter Knives, Doctor Blades etc

STRAW.

UNDERWOOD, E. & SON, Ltd., Brentford, London, W. Press-packed Oat, Wheat, or Rye Straw, delivered to the chief British ports or railway stations.

RAGS.

CHALMERS, E. & Co., Ltd., Bonnington Leith.

MULLER, A. E., 9, Fenchurch Street, London, E.C.

SCHNURMANN, J., 148, Wool Exchange, London, E.C. Importer and Exporter of Paper Stock, Woollen Rags, Waste, etc.

WOOD PULP.

ALSING & Co., Ltd., 110, Cannon Street London, E.C. Agents for the well known "K.K." Soda Pulp; also Sulphite and Mechanical.

AUSTIN & ELTRINGHAM, 21, Old Corn Exchange, Manchester. Wood Pulps, Satinite, Sulphate of Alumina, and all Papermakers' Chemicals and Colours

GRANT, W. & Co., 17, Baltic Street, Leith. Agents for best shippers, Sulphite and Sulphate, Mechanical, Pine, Brown, Aspen.

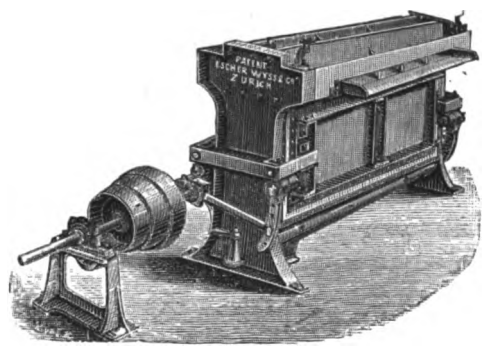
MULLER, A. E., 9, Fenchurch Street, London, E.C.

WERTHEIM, A. & Co., Hamburg.

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

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United States Mineral Production

IN 1897.

The following is an abstract of the annual statistical summary compiled by the *Engineering and Mining Journal*, New York :—

The mineral production of 1897 again establishes a record, but from present indications it will be exceeded during the year which is just opening.

Barytes.—The production was 27,316 short tons, against 21,900 short tons in the previous year. The increase was due partly to the improvement in industrial conditions, and partly to the exclusion of imported mineral by the new tariff law.

Bauxite.—The production increased from 17,096 long tons to 18,000 long tons. In each year the most part of the output was made in Alabama, the remainder coming from Georgia. A noteworthy feature of this industry in 1897 was the beginning of an export trade.

Gypsum.—There was a small increase in the production; in 1897 the output was 235,000 short tons (673,148 dols.), which was quarried chiefly in New York, Michigan, Kansas, and Iowa.

Magnesite.—This mineral is mined only in California, where there are large deposits. The production in 1897 was 1,907 short tons, against 2,067 in the previous year.

Pyrites.—The production in 1897 was 128,618 long tons, valued at 380,299 dols., against 117,782 long tons, valued at 297,853 dols., in 1896. This was produced chiefly by one mine in Massachusetts and two in Virginia. The increase in production was due to the continued high price of brimstone, and the consequent change of many acid makers from brimstone to pyrites as a source of sulphur.

Salt.—The production of salt in 1897 was 14,455,788 barrels of 280 pounds, valued at 1,836,883 dols., against 13,351,573 barrels, valued at 1,696,030 dols., in 1896. Upwards of 90 per cent. of the production in 1897 was evaporated from brine, there having been a large falling off in the production of rock salt in Kansas. Included in these figures is the salt used in the manufacture of soda ash, in which there was an increase.

Soda.—The production of soda ash, reckoned on a basis of 58 per cent., was 177,000 metric tons, valued at 4,071,000 dols., against 158,975 metric tons, valued at 3,656,425 dols., in 1896. The growth of this industry is highly gratifying in view of its comparatively recent establishment in this country.

Sulphur.—The production in 1897 was 1,690 short tons, valued at 34,645 dols., against 2,800 short tons in 1896, valued at 64,200 dols. Of the production in 1897, 1,000 tons were from Utah, and the remainder from Louisiana.

British Imports of Wood Pulp.

We are glad to notice that a better classification of the imports of wood pulps has now been introduced in the official returns, enabling one to distinguish the "chemical" from the "mechanical." The arrivals last month were as under :—

CHEMICAL.

From Norway ...	7,685 tons.	£48,553
,, Other countries	4,564 ,,	35,295

MECHANICAL.

From Norway ...	12,120 tons.	£32,574
,, Other countries	7,832 ,,	40,636

Looking at the total imports of wood pulp, there was last month, compared with January, 1897, a reduction of 5,834 cwts., and in value £22,605.

TOTAL IMPORTS.

January,	1898	32,201 tons	£157,058
,,	1897	38,035 ,,	179,663
,,	1896	21,170 ,,	115,757

There was a heavy decline in the receipts of wood pulp from Norway. The following are the comparative totals for the three years :—

FROM NORWAY.

January,	1898	19,805 tons	£81,127
,,	1897	27,542 ,,	106,470
,,	1896	15,649 ,,	74,069

The arrivals from other countries show a comparative increase last month. The following are the totals for January of this and the two preceding years :—

FROM OTHER COUNTRIES.

January,	1898	12,396 tons	£75,931
,,	1897	10,493 ,,	73,193
,,	1896	5,521 ,,	41,688

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
A B..	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba.	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C..	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D..	71	28	730	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E..	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F..	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G..	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H..	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I..	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z..	210	82½	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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"Normal" Papers.

"Normal" papers are now in great favour in official circles on the continent, the various authorities insisting upon a reliable quality. The last yearly report has just been issued by the Charlottenburg Office, with particulars of the results of various tests.

The public authorities submitted 729 papers for tests, compared with 266 in 1889. The papers examined showed 12·9 per cent. better than required, 67·9 per cent. exactly as demanded, and 19·2 per cent. below the required quality, which were therefore rejected. The toughness is, in some cases, greater than demanded, and therefore the requirements are held not to be unreasonable.

Including the papers which were better than the stipulations demanded, the percentage of the papers up to the mark came to 80·8 per cent., which in the previous year only reached 80·4 per cent., which shows progress in the matter of quality.

The instances where, by using a better raw material than required, greater toughness, etc., was produced, were not as frequent now as they were in former years. This shows that the manufacture of normal papers is now more regular, and makers know better how to produce exactly what is wanted.

The number of papers rejected owing to unsuitable raw material is becoming smaller. By comparing totals the percentage of rejections in 1889 and last year has gone down to about a fifth, which must be considered highly satisfactory.

The tests against crumpling do not seem to be sufficiently understood. Elasticity has sometimes only been 0·1 per cent. too small, nor have tests always quite corresponded to each other.

The excess in the ash contents of normal papers remains within the limits of 0·4 and 0·1 per cent.; other faults in the raw material were that in Class II. there was too much chemical pulp, but in two cases there was not enough cellulose in Class I. As for each class of material the cellulose is clearly prescribed; a test should give a clear result stated in figures, though the microscopic examination would allow a certain margin, according to the greater or smaller skill of the operator and the condition of the paper.

The Testing Office also examines papers submitted by private people, but for some reasons general conclusions cannot so well be drawn from these tests. Whereas public offices are compelled by law to have all their normal papers tested in Charlottenburg, and thus give that institution a general idea of the productions in this line, private concerns only come when some exceptional, not to say abnormal, circumstances occur.

One-fifth of the papers tested with a watermark during the year were incorrect, and the authorities proposed to the makers to use a dry stamp across the watermark cancelling it, a proposal that will scarcely be acted upon, as makers would thus advertise that they had made unsatisfactory deliveries. Unless, therefore, the paper is worked up again, it could only be sent in where tests are not expected to be made, and this may be the reason of the authorities testing even the smaller parcels. Normal papers dry stamped for a lower class have never been seen anywhere, as can be easily understood. Thus far the authorities have protected themselves, but out of their reach among private firms there must be two kinds of normal papers still in existence, those that are correct, and those that are irregular. If the irregularity is only slight, with a small allowance, such papers could easily be sold to consumers, who are not particular about a small percentage more or less resistance to crumpling or elasticity, or whether 10 per cent. more chemical pulp is in the paper or not. A certain caution is necessary, because if these cheaper papers give satisfaction they may be ordered again, and thus the competition in normal papers would become increased.

Some tables give very interesting comparisons about the relations of various makers to the normal paper industry. In order not to commit any indiscretion, numbers have been given to the various correspondents quite independently, and thus recognition becomes impossible. Each firm can find out his own number in the list, but he cannot know what other firms are represented by the other numbers. Altogether fifty firms participated during the year in the making of watermarked normal papers, as far as can be seen from the Charlottenburg reports. This is an increase compared with previous years, the figures being 45 in 1893, 42 in 1894, and 44 in 1895.

The accuracy of making correct normal papers is on the increase with many firms, with others it is the reverse; in most cases the care taken is most satisfactory. It may be stated that 73 of the 140 insufficient tests referred to six mills only, but 17 mills out of the 50 delivered everything correctly, and did not fail in a single instance.

GERMAN IMPORT AND EXPORT TRADE.—The Board of Trade returns of the German Empire for the year 1897 show imports of 401,630,423 metric centner, against 364,102,570 in 1896 and 325,309,756 in 1895, showing an increase of 10·31 per cent. and 23·44 per cent. respectively; the exports amounted to 280,076,094 metric centner, against 257,198,756 in 1896 and 238,296,583 in 1895, showing an increase of 8·89 per cent. and 17·53 per cent. respectively. The value of the imports during the twelve months, exclusive of precious metals, represented 4,646,492,000 marks, against 4,307,163,000 and 4,120,666,000 in the two previous years, an increase over 1896 of 7·88 per cent. and over 1895 of 12¾ per cent. The value of the exports of the year totalled, exclusive of precious metals, 3,652,949,000 marks, against 3,525,130,000 and 3,317,900,000 marks in the two previous years, showing an increase over 1896 of 3·63 per cent., and over 1895 of 10·10 per cent.

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VOL. XXIX. No. 7. LONDON: FEBRUARY 18, 1898. EVERY FRIDAY. PRICE SIXPENCE.

THE GREAT
American "News" Combine

TO BE KNOWN AS
THE INTERNATIONAL PAPER CO.

Further particulars have now come to hand of the successful formation of the International Paper Co., with a capital of 45,000,000 dols. The main office is at Corinth, Saratoga County, N.Y. It is the largest industrial company ever incorporated in the State of New York.

The company is formed to maintain, conduct, and manage in the State of New York and elsewhere all kinds of paper manufactures, including the manufacture and production of any other fibre, and as a part of and incident to such business to conduct the mining of iron pyrites, clay, sulphur, coal, agalite, and any fibrous minerals and materials, to purchase, lease, and develop wood lands, and to purchase and hold merchandise in New York and other States and in Canada.

The capital stock of 45,000,000 dols. is divided into 25,000,000 dols. of preferred stock, and 20,000,000 dols. of common stock, each divided into shares of 100 dols. each. The power is reserved to increase the preferred stock by an issue of 100,000 shares at the par value of 100 dols. each, if the same shall be required for the conversion of the mortgage bonds of the company, to be issued for the aggregate principal sum of 10,000,000 dols. The company is to commence business with 60,000 dols.

The preferred stock shall be entitled, out of the surplus net profits, to cumulative dividends at the rate of and not exceeding 6 per cent. per annum, beginning on April 1st, 1898, payable in quarterly dividend, in preference and prior to any payment of any dividend on the common stock for such quarter. The common stock shall, after the payment of quarterly dividends on the preferred stock, be entitled to such dividends as may be declared out of the net surplus of the earnings of the company.

Among other things the company is authorised to purchase, acquire, hold, and dispose of the stocks, bonds, and other papers of indebtedness of any corporation, domestic or foreign, engaged in a business similar to its own, or which is in any way connected with the manufacture of paper or any of its component parts, or it may issue its stock or bonds in payment for the stock, bonds, and property of any other corporation which it desires to absorb.

The directors and the number of shares of preferred stock held by each are: Ogden Mills, 10; D. O. Mills, 70; William B. Dillon, 90; Judson T. Francis, 3; Hall Park McCullough, 2; Melville Edgar Ingalls, Junr., 2, all of New York City; Alonzo N. Burbank, of Bellows Falls, Vt., 90; Thomas S. Cooldige, of Glens Falls, 10; Warren Curtis, of Corinth, 100; I. W. Drew, of Lancaster, N. H., 100; Frank T. Benner, of Howton, Mass., 10; David W. Snow, of Portland, Me., 100; Edward R. Greene, of Brooklyn, 30.

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It is said that the company will have as officers a president, four vice-presidents, who will be heads of departments; a secretary and a treasurer. There will be an executive committee and a finance committee, besides a sales department, and a manufacturing and construction department. It is said that there are now sixteen companies in the combination, with a possibility of five more coming in. The new company, it is said, will assume control on or before February 16th.

The mills represented include the following, with their capacity per diem: Otis Falls Pulp Company, Livermore Falls, Me., 150 tons; Glen Manufacturing Company, Berlin, N. H., 135 tons; Rumford Falls Paper Company, Rumford Falls, Me., 100 tons; Fall Mountain Paper Company, Bellows Falls Vt., 105 tons; Winnipiseogee Paper Company, Franklin, N. H., 70 tons; Webster Paper Company, Bangor, Me., 26 tons; Montague Paper Company, Turners Falls, Mass., 11 tons; Russell Paper Company, Lawrence, Mass., 20 tons; Falmouth Paper Company, Livermore Falls, Me., 60 tons; Haverhill Paper Company, Haverhill, Mass., 40 tons; Glens Falls Paper Mill Company, Glens Falls, N.Y., 275 tons; Hudson River Pulp and Paper Company, Farmers Falls, N.Y., 150 tons; Niagara Falls Paper Company, Niagara Falls, N.Y., 120 tons; Lake George Paper Company, Ticonderoga, N. Y., 50 tons; Herkimer Paper Company, Herkimer, N.Y., 25 tons. The aggregate capacity is 1,387 tons.

There are five other mills which eventually will come into the combination. The time which would be necessary for them to make the legal arrangements would delay the formation of the trust, and it was thought best to go ahead immediately with the plan of organisation. These five companies, with their capacity, are: Piercefield Falls Pulp and Paper Company, Piercefield Falls, N.Y., 30 tons; Gould Paper Company, Lyons Falls, N.Y., 30 tons; Ontario Paper Company, Watertown, N.Y., 26 tons; Remington Paper Company, Watertown, N.Y., 30 tons, and Wilder Company, Olcott Falls, Vt., 40 tons. This will increase the total capacity to 1,543 tons per day.

For the first year each plant will be operated under the present owners, but when the General Manager is elected he will have power to appoint his assistants for each plant.

Consent of the directors has been obtained to issue a mortgage of 10,000,000 dols. on the entire property as security for an equal amount of six per cent. bonds, payable in gold.

THE BROWN TRADE.—The makers of brown papers in Germany lately met at Dresden. They agreed that their decision at the Leipzig meeting last year to improve prices and not to sell below certain limits had been carried out with success. The meeting resolved to continue the existing agreements. There were only three or four outsiders, whose total production was said to be very small,

Stationers' Social Society.

FOURTEENTH ANNUAL DINNER.

One of the most successful gatherings of the members of this flourishing society was held on Saturday night, at the Holborn Restaurant, the occasion being the fourteenth annual dinner. It must be a source of considerable gratification to the promoters of the society to recognise that their aims have been successfully realised. To-day the society is in a strong position, with a growing membership, and the periodical gatherings held have assisted to promote the feeling of good fellowship amongst the members of the London paper trade, a feeling which is not confined solely to social functions, but manifests itself in business relations. The society is to be congratulated in having as its president this year Mr. Alderman and Sheriff Frank Green. He took the chair on Saturday, being faced by the vice-president, Mr. John Mackie, and supported by Mr. Alderman Strong, Mr. F. G. Nichols, and amongst others present were Messrs. Henry Green, W. Bacon, W. Wilkins, G. A. Hudson, W. L. Wakefield, A. H. Marden, W. H. Cook, T. F. Black, Black, jun., Cayzer, Dryer, M. Henry, T. G. Larkin, G. P. Chandler, H. Birrell, W. J. Jones, H. J. Magee, Dan Magee, A. H. Robinson, J. Wilson, R. Dover, R. Fuller (assist. sec.), R. Sage, E. Hunter, Samuel L. Green, Embley, Jackson, C. Fletcher, G. H. Wheatley, Captain Haydn Green, W. Robinson (hon. sec.), E. Craster, James Wilson, J. A. Kidd, W. H. Wheeler, G. S. Weeks, E. C. Haynes, H. Bishop, Ward, Donaldson, A. E. Sim, J. McCoy, O. Booth, F. Gillis, M. Barnard, T. Wydell, Bert Grant, Horsburgh, W. Bass, T. J. Whitburn, E. Mayer, F. Stotyer, J. E. Smith, W. Allworthy, Hopkinson, Curtis, W. Butler, W. D. Cork, T. C. Royle, W. F. Edwards, G. H. Dale, R. L. Jeffery, R. F. Barber, J. H. Boston, E. Amor, H. J. Matthews, Alan Dale, W. Dell, A. Monckton, B. W. Soper, H. P. Monckton, W. A. Kershaw, E. C. Reed, W. MacMaster, G. Gold, F. Sparks, G. F. Poole, G. R. Wentzell, H. Davies, Ockenden, and Parsons.

The CHAIRMAN, in submitting the "Queen and Royal Family," a toast enthusiastically received, referred to the wonderful development of the paper trade during Her Majesty's most beneficent reign.

Presentation.

The CHAIRMAN said it was his duty and pleasure on behalf of the members, and in their name, to ask Mr. Mackie's acceptance of a handsome badge as a token of their appreciation of the excellent manner in which he had discharged the duties of chairman during the past year. (Applause.) In pinning the badge on Mr. Mackie's coat, he hoped that the recipient would live for many years to adorn the badge, which now adorned him. (Loud applause.)

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Mr. MACKIE suitably responded, stating that he felt it an honour to receive the badge from the hands of Mr. Alderman and Sheriff Green. He thanked the chairman for the flattering way in which he had alluded to his offices in the chair, and although he felt he had poorly discharged those duties, it was a pleasure to know that his efforts had been appreciated by the members. (Applause.)

The Paper Trade.

Mr. ALDERMAN T. V. STRONG submitted the toast of "The Paper Trade." He ventured to say that the paper trade, apart from many drawbacks, was still a flourishing industry. He was old enough to remember the paper trade in more booming days, and perhaps, compared with the present time, there were many inclined to take a melancholy view. In his time paper fetched four times its value than it did now, but in cheap paper the advantages were with the community. Although those huge profits in the past were now only represented by a small discount on those rates, there was a larger field, and if there was not the competition half of the publications would not have life. They must show themselves ready to meet the increased demand. Apart from the mere profits of their business, they could always take into account the contribution the trade made to the general good. He would rather be engaged in the paper trade than in the manufacture of gunpowder or big guns. Those engaged in the paper trade did their part in promoting peace and good fellowship amongst communities and removing the probabilities of war. (Applause.) Whilst they were thankful for the past, they were hopeful for the future. (Applause.) Their society had made strides with the growth of the trade; he was one of their earliest presidents, and it was perhaps one of the greatest distinctions he had ever had in his life. From a small membership they had made great headway, and the present gathering was certainly the largest meeting they had ever had in the history of the society. (Applause.) He congratulated the society, not only on its increased membership, but in having as its president an Alderman of the City of London, and one of the High Sheriffs. (Loud applause.) Not only did he bring to the society that *eclat* associated with the city, but proclaimed himself to be a "Social" of the first water. (Applause.) He had great pleasure in associating the name of Mr. Nichols with the toast.

Mr. F. G. NICHOLS, in reply, said he felt in an awkward position in responding to a toast of such great importance as the paper industry. He was becoming old in the paper trade, his experience extending over 20 years. Mr. Alderman Strong had made a distinction between the paper industry as a peaceful trade, and those engaged in providing the utensils of war. He might point out that paper was used in warfare, viz., cartridges and ammunition papers. He could endorse everything the last speaker had said; going back and comparing prices, it certainly showed the wonderful energy that had been thrown into the paper trade. They were able to compete in every market of the world, and that being the case, he thought they would in the future be able to enjoy that prosperity which had been the distinguishing characteristic of the trade in the past. (Applause.)

Stationers' Social Society.

The CHAIRMAN next submitted the toast of the evening, "The Stationers' Social Society." (Applause.) He regretted the task of proposing the toast had not fallen in more able hands, for instance, in those of Mr. Alderman Strong's. When the very great compliment was paid to him of asking him to take the chair on the present occasion, he felt very much like the man in the street, that he knew very little about it. In that condition of ignorance he did about the best thing in consulting their able secretary, whom he occasionally saw during the week. (Laughter.) In reply to a question "What does this Society do?" he (the secretary) placed a little volume in his (the speaker's) hands and directed attention to Rule IV., 'To promote good fellowship of the members and the interests of each individual member." He immediately requested to be enrolled as a member, as he felt his individual interests would be looked after. (Laughter and applause.) Mr. Robinson referred to several other matters, and he (the speaker) would mention one, that the society had been formed fourteen years, and amongst the original founders they had Mr. Barnard, Mr. Rochfort, and Mr. Robinson. (Applause.) The members appreciated the work that had been done in founding the society. They lived in very trying times, competition in every trade was becoming keener and keener year by year, and the paper trade was no exception. The duties, requirements, and necessities of the trade compelled them more than ever to put their shoulders to the wheel and keep it turning round. (Applause.) They were faced with competition of the keenest kind, and it required all their energy to cope with it. He considered that a society of this kind was more beneficial than ever; it was indeed a matter of the greatest relief to them to meet together in a pleasant social manner and to throw business for a while from their shoulders and greet each other in a social way. Meetings of this kind made amends for many a trying hour, and if the society had not done anything more than promote gatherings of the kind they were celebrating that night, it had done a great service. (Applause). It was a pleasure to meet the friends around the table, as "hearty fellows well met," and in conclusion he asked them to drink success and continued prosperity to the Stationers' Society. (Loud cheers).

Mr. ROCHFORT, one of the original founders of the society, was called upon to respond. He said it was very gratifying to those who had been instrumental in starting the society, to find that their efforts had met with success. He deeply appreciated the kind words spoken in regard to the use of the society in promoting good

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fellowship amongst the members of the trade. The founders could look back with gratification, the society having grown year by year, and, judging from the gathering that evening, the present year was a record one. On behalf of the founders, he thanked the Chairman for his kind observations. (Applause).

The Officers.

Mr. C. D'OYLEY MEARS, in giving the toast of "The Officers," referred to the excellent manner in which the work of the society was carried out, and remarked that their thanks were especially due to Mr. T. C. Royle, the treasurer, and to Mr. Robinson, the secretary. (Loud applause).

Mr. ROBINSON, the Hon. Sec., replied, and thanked them for the usual uproarious manner in which the toast had been received. The number of members—about 120—was well maintained.

Mr. MACKIE submitted "The Visitors," Messrs. Bishop and Fletcher responding.

The Chairman.

Mr. ARTHUR MONCKTON, owing to the early departure of Mr. T. C. Royle, C.C., gave the toast of "The Chairman" in eulogistic terms. He mentioned that Mr. Alderman and Sheriff Green had done much for the paper trade, and it was due to his action that the improvements in Upper Thames-street were carried out. (Applause). The society was greatly honoured in having him as its president. (Applause).

The CHAIRMAN, in response, said he always felt that one of the most difficult duties a man had to discharge at gatherings of that kind, was to find anything like adequate words in which to respond to the toast of his health, especially when it was so cordially given and received. He hoped that they would feel that he was deeply sensible of the honour they had done him in putting him in the chair. Mr. Monckton had referred to his connection with the paper trade and to the Corporation of the City of London, and he (the speaker) was sure he would pardon him if he referred with gratification to the fact that the paper trade had in the Corporation, in the person of his friend Mr. Strong, one of its most honoured members. He was glad to be associated with him at the Guildhall, and hoped the friendship which had existed between them so long, would be further cemented. (Loud applause). In conclusion, he thanked them for the cordial way in which they had received the toast of his health. [The Chairman, having another engagement, vacated the chair, which was then occupied by Mr. Alderman Strong.]

During the evening a capital programme of songs was rendered at intervals.

RAMSBOTTOM PAPER-STAINING CO., LTD.—Registered with a nominal capital of £5,000 in £100 shares. Object sufficiently indicated by the title. The first directors are W. A. Barnes, R. Holden, and J. Harrison. Qualifications, £5,000. Remuneration to be fixed by the company.

Stocks and Shares.

Very little change has taken place this past week among paper mill shares, but the movement has been in a downward direction. Hartlepool's and North of Ireland are ¼ down, and a like fall is noticed in Star. East Lancashire (all issues) keep very firm, but are without change from last week's quotations. Hyde are wanted, as also are Roach Bridge, but there is very little doing at present in any of them.

There is a little more activity in Chemical securities, but these are chiefly at higher quotations. Brunner, Mond's ord. are 1 point, and the pref. ¼ better. A fall of ¼ has taken place in Bowman, Thompson pref., and United Alkali pref. are ⅛ easier. The remainder are strong, but nothing much is doing in general.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
5	5	Hyde Paper Works Co.(Ld.)	nil	1½—2
10	10	Bath Paper Mill Co. ,,	5	11½—12
100	100	Berryvik Co., Ltd., 4½% debs.	4½	103—105
10	10	do. do. 6% pref.	6	12—13
3½	5	Barnsley Paper Co. (Ld.)	10	6—6½
7	7	Bury Paper, ord. ,,	6	6½—6¾
7	7	do. 6% pref.	6	7¼—7¾
2½	3	Collin (Darwen) Paper ,,	nil	4⅝—5 5
3½	5	Darwen Paper Co. ,,	15	7⅞—8¼
10	10	E. Lancashire Paper Co. ,,	nil	6—6½
10	10	do. do. 6% pref.	nil	6½—7
5	5	do. do. bonus	nil	2½—3
4	5	Hartlepool Pulp & Paper,,	10	7—7½ c.d.
2½	5	Kellu'r-Part'g'n P'p Co,,	15	7¼—8¼
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7¼—7½ x.d.
7	10	Olive Brothers ,,	10	7½—7¾
5	5	Peebles (A. M.) & Son ,,	8	7⅞—8¼
5	5	do. 5% cum. pref.	5	6¾—6¾
100	Stock	do. 4½% deb. issued 1905	4½	111½—112½
3	5	Ramsbottom Paper Co. ,,	10	7—7½ c.d.
1	1	do. do. cum. pref.	5	1⅛—1⅛ c.d.
4½	5	Roach Bridge Paper Co. ,,	10	5—5⅛
5	5	Star Paper Co.	10	7½—7¾
3	5	do. do. cum. pref.	10	5—6½
1	1	Thomas Owen & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2—2⅛
10	10	Waterlow & Sons non.-cum. def.	12	15½—15¾
		do. do. non.-cum. pref.		15½—15¾
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	8¼—8½
10	10	do. do. cum. pref.	7	11½—11¾
100	100	do. do. debs. (red. 1904)	6	104—106
10	10	Brunner, Mond & Co. (Ld.)	20	42½—42¾
3½	10	do. do. "New" ,,	20	16¾—17¼
10	10	do. do. 7% pref. ,,	7	18¼—18½
5	10	do. do. do. new issue	7	8½—8¾
1	1	Castner-Kellner Co. ,,	—	22/6—23/6
5	5	Clayton Aniline cum. pref.	6	5⅞—6¼
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11¼—11½
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	2⅛—2¼
10	10	do. do. cum. pref. ,,	7	9⅞—9¹⁵⁄₁₆
100	Stock	do. mort. deb. (red. after 1901)	5	111½—112⅛

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PURE ALKALI

Crescent Brand B.M&Co. Trade Mark.

GUARANTEED 58 DEGREES,

Equal to 98 per Cent. Carbonate of Soda.

The STRONGEST and PUREST Form of the Article in the Market, **and therefore the MOST ECONOMICAL** for the Use of Papermakers, **Printers, Bleachers, Wool Scourers,** Dyers, Glass, and Soap Makers.

BICARBONATE OF SODA,

☛ **REFINED and RECRYSTALLISED.**

The PUREST and **CHEAPEST** in the Market.

SODA CRYSTALS

OF THE FINEST QUALITY.

Concentrated Crystal Soda

(Sesqui Carbonate)

By far the PUREST and CHEAPEST Form of Washing Soda. Only 1-lb. of Concentrated Crystal Soda required to do the Work of 2-lbs. of Washing Soda.

BRUNNER, MOND & CO., LTD.

NORTHWICH, CHESHIRE.

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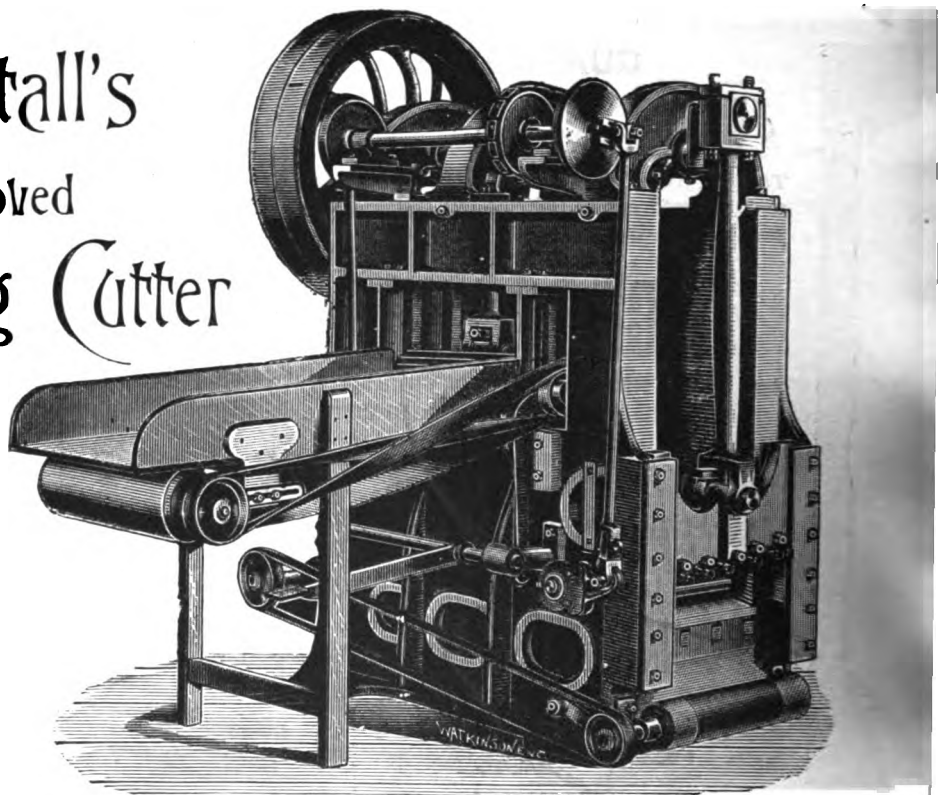
Papermaker

BURY, nea

Nuttall's Improved Rag Cutter



This Machine has now been Greatly Strengthened and Simplified, and its Output Capacity Increased. It is Equally Effective upon the Strongest and Lightest Materials, and will Cu Every Class of Stock.

Sole British Makers of t

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FULL PARTICULA

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JACKSON
LIMITED.

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IANCHESTER.

Marshall's Patent Perfecting Engine

table for all
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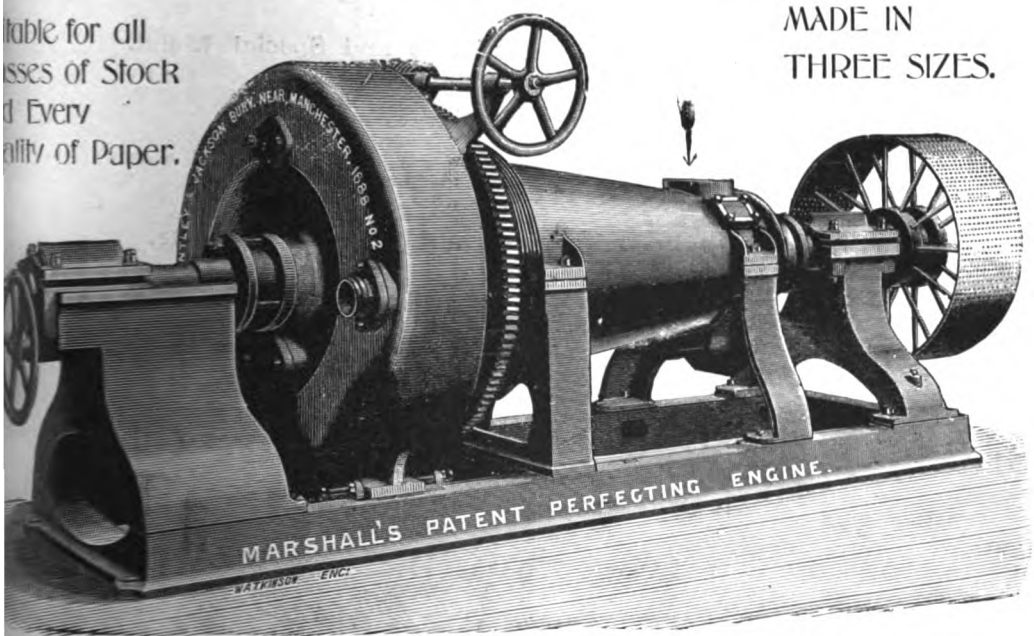
ality of Paper.

MADE IN
THREE SIZES.



This Engine will produce a Better Finished, Stronger, and More Even Sheet of Paper from the same Materials than can be produced by any other Mechanical Process, and at the same time will REDUCE the TIME and POWER Required for Beating.

OBURN - TAYLOR Machine.

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UNITED WIRE WORKS

LIMITED.

Manufacturers of

Paper Machine Wires

(up to 174 inches wide)

Plain Phosphor Bronze, Platine, Electro and Special Metal.

Presse Pate Wires,

Plain, Twisted, Tinned Twisted, and Phosphor Bronze.

Dandy Rolls,

Laid, Wove and Spiral with Watermarking.

Brass, Copper, Steel & Iron Wire Cloth,

All Sizes, Meshes and Gauges.

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EDINA WORKS, LEITH WALK, EDINBURGH.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

MR. T. Y. NUTTALL, of Darwen, is now identified with a new undertaking which provides for the reopening of Penwortham Mill, Walton-le-Dale, and to adapt it for the purpose of papermaking. It is stated that there is a fine water supply. Mr. Nuttall recently made an application to the Walton-le-Dale District Council for permission to dispose of the effluent water into the Council's tanks. The Council, however, refused the application.

THE STRAWBOARD MANUFACTURERS' ASSOCIATION of the United States, have placed the sale of their products in the United Kingdom in the hands of Messrs. Christie and Co., of Brickhill-lane, Upper Thames-street, London, E.C. It is anticipated the various qualities of boards manufactured will largely replace the German article.

THE WEST LONDON PAPER MILL CO., LTD. (IN LIQUIDATION). — Messrs. Fuller, Horsey, Sons, and Cassell, will offer for sale by auction, on Tuesday, March 8th, the leasehold property known as the West London Paper Mill, Lot's-road, Chelsea. Many of our readers may remember that at this mill a system of dealing with waste refuse was introduced, the paper, rags, etc., obtained from the "dust-bin" being, with the addition of other material, utilised in the manufacture of brown paper. The auctioneers will offer, in the first instance, the plant and machinery with the property, but if not then sold, the lease will be offered separately and the machinery in lots. There is a 80-in. papermaking machine, slitting and cutting machine, washing and beating engines, boilers, steam engines, etc. Catalogues may be obtained from Messrs. Fuller, Horsey, Sons and Cassell, 11, Biliter-square, E.C., and of the liquidator, Mr. Arthur B. Russell, 11, Ludgate-hill, E.C.

ADVICE TO BOILER ATTENDANTS.—The Manchester Steam Users' Association, whose office is at 9, Mount-street, Albert-square, Manchester, has issued a poster bearing the name of the chief engineer of the Association, Mr. C. E. Stromeyer, and headed "Advice to Boiler Attendants." This course has been taken in view of the recent annual report of the Board of Trade on boiler explosions, in which complaints are made of the negligence shown by boiler attendants. The notice gives, in the first place, some leading points as to the general working of boilers, and, under the heading "Warnings," it next gives some very precise instructions as to what a fireman should do when—an event which, it seems, happens only too often—he has neglected his duty. Hitherto he has been left to rely on his own judgment and resources whenever he has found himself face to face with a threatened explosion, so that the "advice" now given, and intended for posting up in the engine-house itself, should be of much practical utility.

MESSRS. J. CROSFIELD AND SONS, LTD., of Warrington, are placing upon the market powdered 99 per cent. caustic. It is claimed to be the purest article at present made.

WE understand that Mr. Henry J. Rogers, of the Watford Engineering Works, has opened an office in London as an electrical engineering branch, Mr. H. J. Spencer, A.I.E.E., having been appointed manager of the London branch of the business.

MR. ALF. STEIGER, C.E., expert on water power, of 16, Mincing-lane, E.C., has supplied and erected for Mr. A. J. Taylor, of Strensham Mill, near Tewkesbury, a turbine to utilise the exceptionally low fall of two feet. The turbine, recently successfully started, produces 40 brake horse-power under the fall mentioned. There are, probably, not a dozen turbines in existence utilising such a low fall in such a successful manner. Mr. Steiger is the representative in this country for the well-known engineering firm of Messrs. Escher Wyss and Co., of Zurich.

BRITISH CHINA CLAY ESTATES, LTD. — Registered with a nominal capital of £20,000 in £1 shares (6,000 seven per cent. cumulative preference). Object, to acquire, explore, exercise, work, develop, and turn to account any mines, mining rights, and metalliferous land in Cornwall. The subscribers are to appoint the first directors. Remuneration, 100 guineas each per annum, and 150 guineas for the chairman.

EXHIBITION OF PAPER AND STATIONERY, ETC., AT THE LEIPZIG FAIR.—The Paper and Stationery Trades Exhibition of the Paper Union, to be held in connection with the Leipzig Fair, in the Merchants' Club House, from the 8th to the 11th March next, is likely to be a highly interesting event. The attention of foreign firms is being directed to the extensive range of exhibits that will be on show, covering not only the paper and stationery trades, but the fancy leather, book, and allied industries. Intending visitors may obtain full particulars from the Chairman of the Union, Mr. Bruno Nestmann, of the firm of Carl Nestmann, Leipzig.

THE EXPORTS OF PAPER from New York, according to the last weekly list received, included the following:—To London, 4,410 packages and 189 bundles; Liverpool, 412 packages; Hull, 622 cases; Leith, 80 packages; Manchester, 250 packages; Bristol, 60 packages; Cardiff, 199 packages; Aberdeen, 38 packages; Dundee, 96 packages; and Glasgow, 210 packages. Shipments to Antwerp amounted to 45 packages; Copenhagen, 19 packages; Hamburg, 11 packages; Rotterdam, 2 cases; Australasia, 1,818 packages; B. Honduras, 86 packages; B. W. Indies, 2,188 packages; Brazil, 639 packages; C. America, 184 packages and 20 cases; Mexico, 295 cases; N. Zealand, 1 case; and Newfoundland, 81 packages.

S.O. CONTRACTS.—Tenders were invited to be sent in to-day (Friday) for the supply of paper to H.M. Stationery Office, London.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

NEW CELLULOSE WORKS.—The Waldhof Co., of Mannheim, Germany, have decided to open works in Russia.

THE FRENCH MARKET.—Mr. A. L. Grondal, of Paris, in reporting upon the wood pulp trade, states that since the commencement of the year the market for mechanical has continued firm but quiet. Sellers are prepared to do business on the old lines, but French consumers do not care to make any big deals at present, preferring to wait in the hope of an ultimate drop in prices. In regard to chemical pulps, the market for sulphite is fairly strong, but business quiet. The ruling quotations will be seen upon reference to our Market Report on page 18.

SCANDINAVIAN WOOD PULP. — Reports from several correspondents in Norway and Sweden state that complaints are being made by manufacturers owing to the poor demand for wood pulp. Compared with previous years, business is considered to be very slow, and manufacturers now show more readiness to make concessions in prices.

NORWEGIAN SHIPMENTS TO GREAT BRITAIN. — Wood pulp was received at British ports from Norway last month to the extent of 19,805 tons, whereas the quantity for the correspoading month of last year was 27,542 tons, the respective values being £81,127 and £106,470. The falling off is very noteworthy.

THE quantity of chemical wood pulp received from Norway last month was 7,685 tons, of the value of £41,553.

MECHANICAL WOOD PULP was received from Norway last month to the extent of 12,120 tons, of the value of £32,574.

SWEDISH SHIPMENTS to this country are not specified in the official returns, the figures being included under "Other Countries."

THE IMPORTS of chemical wood pulp from "Other Countries" last month reached 4,564 tons, of the value of £35,295.

THE British demand for mechanical wood pulp from "Other Countries" last month reached 7,832 tons, of the value of £40,636.

DURING the past two weeks some heavy arrivals of wood pulp have come to hand from the United States. The s. "Isis" brought 53,530 bundles from Bucksport to Manchester, to the order of Messrs. A. Wertheim and Co.

THE s. "Abrador" recently discharged at Liverpool 1,169 bales from Portland. The s. "Ottoman" also discharged at Liverpool 1,290 rolls from Boston..

MESSRS. HENDERSON, CRAIG AND CO., LTD., are credited with 1,881 rolls per the s. "Kensington" from Philadelphia to London.

FROM the list of imports published in our Market Report this week, it will be seen that several hundred rolls, bales, etc., were received not only from the United States, but from Halifax and St. John, Canada.

THE AVERAGE PRICE per ton of chemical wood pulp imported from Norway last month was £6 6s. 10d., and from "Other Countries" £7 14s. 8d. The average price per ton of mechanical wood pulp from Norway was £2 13s. 9d., and from "Other Countries" £5 3s 9d.

The Esparto Trade.

Messrs. Ide and Christie, in their February Circular, report as follows:—There was little demand in the early days of the year, but before the end of January the disposition evinced by African sellers to further modify their prices produced a distinct impression upon buyers. Enquiries for large contracts over periods not only embracing this and next year, but even extending to 1900, were put upon the market, and these resulted in the negotiation of a large amount of business for shipments to many of the chief ports of this country. There was much in the unprecedentedly low prices to attract buyers' attention and to stimulate their desire for as far-reaching contracts as sellers would concede. As the knowledge of business done has become known, other buyers have put forward enquiries, but sellers are not so ready to take engagements as they were, and are assuming an attitude of greater firmness. Spanish esparto meantime has been offered most sparingly, and the impression that the crop was to some extent oversold seems to gain confirmation day by day. Early shipments can now scarcely be bought, and the enquiries current in the market show that some consumers are but barely secured over the next few months, and would pay very full prices for moderate supplies. The esparto imports for January have been fairly large, although about 1,000 tons less than in the corresponding month of 1897. All the chief ports of entry have received a share of supplies, and there was little or nothing that did not at once pass away from ship's side into consumers' stores. Freights have been weak, a considerable number of steamers having been thrown on the market for re-charter, owing to bad weather and disaster to the orange crop in Spain.

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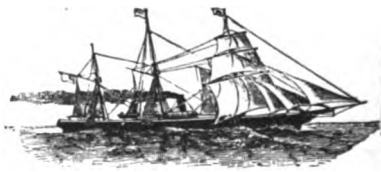
NORWEGIAN ROYAL  MAIL STEAMERS

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GERMANY.

THE CHEMICAL WOOD PULP INDUSTRY.—The Manheim Chamber of Commerce reports that in 1897 there was an increased demand for chemical wood pulp, and the Waldhof works would have obtained higher prices if Scandinavia, Canada, and the United States had not competed in European markets to an increased extent. Although the raw wood went up 15 per cent., sulphite could only be raised by 5 per cent. In consequence of enhanced consumption, a number of sulphite works are in course of erection, which, when finished, will cause a keener competition.

THE WALL-PAPER MAKERS' ASSOCIATION have taken steps to improve prices. A small rise has been enforced. Works are fairly busy, but the preference for English styles continues. Steps are being taken, however, to produce similar paper in Germany.

UNITED STATES.

PAPER FOR JAPAN.—The Combined Locks Paper Co., of Appleton, Wis., are doing a large export trade in news with Japan.

DIGESTER EXPLOSION.—The Park Paper Mill (according to a dispatch from Marinette, Wis.) has been completely wrecked and three men killed, owing to the explosion of a digester. The loss to the Marinette and Menominee Paper Company is estimated at about 50,000 dols. The Park Mills are a portion of the plant of the Marinette and Menominee Paper Company. The paper mill contained two 108-inch Fourdrinier machines, and its capacity was 25 tons of news and manilla per day. The pulp mill contained eight grinders and the sulphite fibre mill two digesters.

THE FAILURE OF MR. W. M. SINGERLY.—The efforts to arrive at a settlement of affairs of Mr. W. M. Singerly, paper and pulp manufacturer, have resulted in a failure. A receiver has been appointed in connection with the Chestnut-street Bank, Philadelphia, of which Mr. Singerly was president.

CANADA.

THE LAKE BOUCHETTE PULP COMPANY have applied for incorporation, to manufacture pulp, paper, lumber, etc. The head office will be in the city of Quebec, and the capital stock is placed at 200,000 dols. Among those interested are: Messrs. J. I. Lavery, of Quebec, and Damase Galbert, of Lake Bouchette.

THE DUFFERIN FALLS LUMBER, PULP AND PAPER CO., LTD., is a new concern, which has recently secured property known as the Du Lievre. It is proposed to build mills at Buckingham, where the Du Lievre pours its waters into the Ottawa.

IT is rumoured that the Saulte Ste. Marie Pulp Company propose building a paper mill.

THE SCANDINAVIAN SECTION

OF THE

World's ABC Paper Mill Guide

Containing Particulars of the Paper and Pulp Mills in Norway, Sweden, Denmark and Finland.

PRICE FIVE SHILLINGS.

WE have pleasure in announcing the issue of the above. It is in a convenient 8vo form, and, to some extent, on the lines of our last Mill Guide, but the information there given is very considerably added to with the view of making this section of the work a complete directory of the "Paper and Pulp Trade of Scandinavia." Full particulars, are given of class of pulp or paper made, output, machinery and power used, nearest railway station, managers and owners, &c., &c.

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- PAPER DEALERS,
- MILL FURNISHERS,
- ENGINEERS,
- PAPER MACHINERY MANUFACTURERS
- RAG and PAPER STOCK MERCHANTS,
- PRINTERS,
- STATIONERS,
- PUBLISHERS, &c., &c.

should note that the A B C Scandinavian Mill Guide will be at once the fullest and most comprehensive work of the kind ever published.

MAP.

The Directory is accompanied by a Large Scale Map showing the situation of the various mills, with numbers appended, referring to the entries in the Guide, and also a numerical index to the names of the Mills whose position is noted on the Map.

Price of Map separately (plain paper) ...	2s. 6d.
„ Mounted on Linen	4s. 6d
„ Varnished, with Rollers & Tape	7s. 6d
Map (plain) and Directory together ...	7s. 6d.

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Maskineri för Sågbruk, Hyflerier, Snickerier, Kvarnar, Trämasse och Cellulosefabriker, Angpannor, Angmaskiner, Turbiner, Transmissioner, Linbanor och Hyfveljern.

H. FÜLLNER, Warmbrunn, Schlesien.
Pappersmaskiner, Holländare, Kollergångar, Skärmaskiner, Callandrar, Levererat i Sverige och Norge 22 st. Pappers & Torkmaskiner.

THOS. HARDMAN & SONS, Fernhill, Bury.
Fritar för Trämasse & Pappersfabriker.

LOUIS LANG & SOHN, Schlettstadt.
Metallduk för Trämasse och Pappersfabriker.

PETER SPENCE & SONS, Manchester.
Alunkakor för Pappersfabriker.

JENSEN & GLAD, Köpenhamn.
Bornholms Kaolinlera.

NILS AALL, Ulefos, Skien.
Flusspat för Gjuterier.

MICHEL'S HANFRØSTE und SEILFABRIK ACTIENGESELLSCHAFT.
Transmissionalinor af Hampa med regulerbar Linlås.

Agentur i Norge:

H. FÜLLNER, Warmbrunn.
Papirmaskiner, Hollændere, Kollergange, Skjæremaskiner, Calandere, m. m. (Leveret i Norge og Sverige 22 Stk. Papir-og-Törremaskiner).

THOM. JOS. HEIMBACH, Düren.
Filter for Trœmasse- og Papirfabrikker.

LOUIS LANG & SOHN, Schlettstadt.
Metaldug for Trœmasse- og Papirfabrikker.

PETER SPENCE & SONS, Manchester.
Alumcakes for Papirfabrikker.

SCHÄFFER & BUDENBERG, Buckau-Magdeburg.
Dampkjedel- og Maskinarmatur.

REINICKE & JASPER, Cothen.
Knotenfangere, roterende og plane.

G. GROLMAN Dusseldorf.
China Clay.

JENSEN & GLAD, Kjöbenhavn.
Bornholms Kaolin.

MICHEL'S HANFRØSTE und SEILFABRIK ACTIENGESELLSCHAFT.
Transmissionstauge af Hamp med regulerbar Taugforbinder.

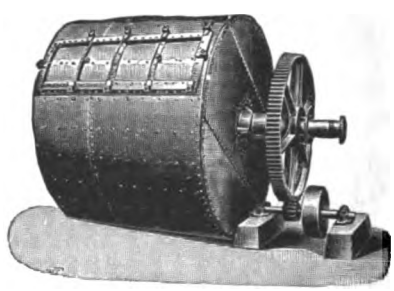
C. BACHE-WIIG & E. MORTERUD'S

Patenterade Barkningsmetod at Träkubb & Pappersved

(BARKCLEANING CYLINDERS FOR PULPWOOD).

Apparater äro Levererade till Följande:

Franö Nya Aktiebolag ...	4
Lottefors Trämassefabrik...	1
Jössefors Aktiebolag ...	3
Brättne Trämassefabrik ...	1
Aktiebolaget Walkiakoski	1
Böhnsdalens Trämassefabrik	6
Embretsfos Sulfitfabrik ...	4
Hunsfos Fabriker	2
Tornator Trämassefabrik...	2
Hafslund Trämassefabrik...	1
Treschow-Fritzöes Fabrik	1
Sörfors Trämassefabrik ...	1
Lövenskiold Fossum ...	2
Drammenselvens Fabriker	1
Union Co.	2
Ranheim Fabrik	1



Foreign Applications Attended to by:

Great Britain and Ireland:
Messrs. CHRISTOPHERSEN, ANDREWS & Co., 91, Queen Victoria Street, London, E.C.

United States:
Messrs. FREDERICK BENTUCH & Co., Temple Court Building, Room 308-10, New York.

Belgique & France:
Messrs. LAMMLETH & CORNET. Anvers.

Deutschland und Oesterreich:
H. FÜLLNER, Warmbrunn, Schlesien.

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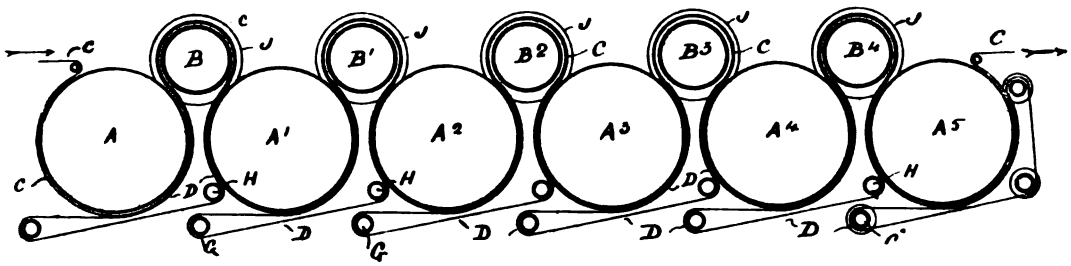
Drying Paper.

Several improvements are claimed by Mr. A. M. Bottger, of Duren (who has recently taken out a patent in this country), in apparatus applicable to papermaking machines for the drying of paper. The object aimed at is the more effectual drying of the paper as it is delivered from the papermaking machine; also to arrange the felt aprons or belts used for supporting the web of paper in the drying apparatus in sections, so that should any portion become damaged, the damaged section can be readily replaced without having to provide new felt for the entire length of the machine.

We give a diagramatic view of a drying machine arranged in accordance with the patentee's idea. He mounts the axles of a series of heated drying cylinders A on suitable frames, and resting upon each pair of the drying cylinders, is another cylinder B for obtaining rapid and more effectual drying by conducting the paper C in an unging over a portion of the circumference of two bottom drying cylinders, the said belt of felt being further supported by small carrying rollers G and H, so placed as to form a loop of felt under one of the bottom drying cylinders, thereby forming a support on to which the paper would fall and be conducted forward to the next drying cylinder should it by any means get torn.

One continuous belt of felt D is arranged for each top cylinder, covering part of the circumference of the bottom cylinders upon which it rests, the felt belt extending beneath the one in front of the other bottom cylinder of each pair.

According to this arrangement, it is claimed that each section of felt belt is dried of the moisture absorbed from the wet paper, by the heated cylinders at the same time the paper is dried, and by the top cylinders B to B^4, each resting upon two bottom heated cylinders, no special framework is required for supporting the former, the guiding of the said top cylinders being accomplished by flanges J, one at each end overlapping the ends of the bottom cylinders, thus guiding



covered condition over the supporting belt of felt D as it passes over the top cylinder B, thereby facilitating the evaporation into the atmosphere of any liquid in the paper C and felt D.

The web of wet paper C as it leaves the papermaking machine is conducted and deposited on one section of the felt belt D and passed over a portion of the circumference of the drying cylinder A between the cylinder and section of felt D. On leaving the drying cylinder A, the felt and paper pass over an upper heated cylinder B, the paper being on the outside of the felt exposed to the atmosphere.

After leaving the upper cylinder B, the paper passes over and in contact with a portion of the circumference of the next bottom heated cylinder A^1, thus by the paper passing over the lower and upper-heated cylinders, both sides are dried, that is to say, one side of the paper is dried by contact with the lower cylinders A to A^5, and the other side on passing over the top cylinders B to B^4 in the latter case, the respective sections of felt D intervening between the heated cylinders and web of paper.

This process of drying is conducted throughout the range of the top drying cylinders B^1 to B^4 and bottom cylinders A to A^5, comprising the machine shown, each top cylinder being provided with a belt of felt D passnot only the top cylinders, but the paper and the respective felt belts also.

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

160 b	Ghent	Liverpool	770 b	Cologne	London
62 r	Boston	,,	282 ,,	New York	,,
10446 b	Leer	Leith	2854 ,,	Rotterdam	,,

MILLBOARDS.

14701 b	Harlingen	Hull			

WOOD PULP BOARDS.

135 b	Gothenburg	Hull	400 b	Stettin	London
45 c	Christiania	,,	60 ,,	Christiania	Grngmth
214 b	Copenhagen	Mnchtr	84 ,,	Hango	Hull
56 ,,	New York	,,			

PASTEBOARDS.

5 c	Rotterdam	Grngmth	710 b	Harlingen	Leith
2 ,,	Hamburg	Leith			

b—bales. c—cases. r—rolls. cr—crates.

THE PAPER TRADE REVIEW is a widely informed and well-managed enterprise, of great value to exporters for its exact Market Reports and statistics of Raw Material.—*Centr-d-Blatt fur die Papier-Fabrikation*, Dresden.

☞ The completeness of its Market Reports have made it INDISPENSABLE to the Paper and Paper Stock Trade, and its DEPENDABILITY is recognised throughout Europe and America.—*The Printers' Register*, London.

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Established 1879.

Printed and Published EVERY FRIDAY

By W. JOHN STONHILL.

at 58, Shoe Lane, London, E.C.,

Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, FEBRUARY 18, 1898.

Great American "News" Combine.

Success has crowned the efforts of the principal manufacturers of "news" in the United States, who, after several attempts, have at last succeeded in effecting a combination of the chief mills. From the particulars published on another page it will be seen that the company will be known as the International Paper Co., and that the capital is £9,000,000. Considering the mammoth nature of the enterprise, the promoters must have exercised considerable energy, tact, and diplomacy in consolidating to the satisfaction, apparently, of all parties the variety of interests involved. Of course the chief object is to place the American "news" industry on a more profitable basis. American competition has been rather keen in the British market, but we are told that the paper consumer has benefited, and not the manufacturer, as the latter admits that some remedy had to be adopted, or ruin was imminent. Competition in the home market also led to unprofitable business, and makers regarded combination as their only salvation. The future working policy of the International Paper Co. will be watched with interest by British papermakers, as probably efforts will be made to keep the American market firm and the surplus production may be shipped to European countries at lower rates. At the outset control will be taken by the company of some seventeen plants, and the absorption of five others is considered likely at a later date. There are, we believe, several important firms outside the combination, and whilst a fractional advance in price will be appreciated, it is not likely that they will quietly rest and allow the International Co. to completely monopolise the home and foreign markets.

* * *

A Papermakers' Club.

The idea of establishing a Papermakers' Club in London has been mooted, but however desirable such an institution may be, will sufficient support be received from papermakers to make a club a success? That is the principal question to be considered, as failure must certainly follow a limited membership. For many years there was a Papermakers' Club held in connection with the Papermakers' Association, but the interest of the members dwindled to such a low degree that the club was dissolved in 1893. In New York there has lately been some talk of a Papermakers' Club, and the American Paper and Pulp Association looks upon the proposal with favour. It is felt that the Association greatly needs a home in New York, which would be headquarters for the whole paper industry of the country—a rendezvous—an office—a bureau of information—a club, both for those who visit New York and those who live there. The field is larger, however, in the United States than in this country.

* * *

Labour in the Paper Trade.

Fortunately there is an absence of labour disputes in the paper trade, and the amicable relations between employers and employed must certainly be highly conducive to the well being of the industry. It has been our pleasure to chronicle many instances where very happy conditions prevail, masters and men forming a sort of "happy family," some workmen remaining all their lives with one firm. Mr. Geo. F. Busbridge, of East Malling, Kent, in speaking at an entertainment he recently gave to his employees, mentioned that many hands had been with him 30 or 40 years, and even for a longer period. The gathering, by the way, was in celebration of Mr. Busbridge's 77th birthday and his golden wedding, and the employees to mark the event and to show their appreciation of their employer's goodwill made him a presentation. Mr. Busbridge, in common with many mill owners throughout the country, is a strong advocate of social intercourse between employers and employees. His sentiments are well expressed in the following song, which he composed some forty years ago, being sung on February 2nd, 1848, on the

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occasion of a festival to mark some extensions to the mills, and repeated at his golden wedding celebration to the tune of "Auld Lang Syne":—

Come friends, let's gather round the board,
And greet with kindly hand;
While hearts with generous feeling stored,
Give welcome to our band.
Now—let us celebrate with glee,
And festal song to-night:
Then we will spend most happily
This season of delight.

Chorus.

May meetings thus be oft enjoyed,
While peace and plenty bless
Both the employers and employed;
And give to each—Success.

Let honest labour have its Right,
And win its fair reward;
Let Duty too, be kept in sight
And claim *its* due regard.
Thus—one in interest—one in mind,
Let all unite to prove
That Industry and Honour find
Reward—in Trust and Love.

Chorus.

* * *

Canadian Tariff.

The announcement has been made in the Dominion Senate that during the present session of Parliament the tariff will be so amended that, after August 1st, only goods from Great Britain and such British colonies as are entitled to the concession shall come in under the *minimum* tariff. This will amount to a preferential tariff of 25 per cent. in favour of the mother country and of colonies giving reciprocal treatment to Canadian goods.

Seizure of American News in Canada.

In our last issue we stated that the Canadian Customs authorities had seized a cargo of paper from the Otis Falls Pulp Co., of Otis Falls, Me., consigned to its Toronto agent, Mr. Chism.

Under-valuation was alleged and the attention of the Government was directed to the matter by Canadian paper manufacturers, who have for some time complained that prices were affected owing to American competition.

The American product has been sold for 2 cents a pound to 2·10 dols. per hundred. The agent for the Otis Falls Pulp Co. entered the paper at a valuation of 30 dols. per ton. The freight on this was 16 cents per hundred pounds, and this was also included in the valuation at 1·50 dols. per hundred. The selling price quoted was 42 dols. per ton, when the Canadians were getting from 48 dols. to 52 dols. per ton.

Since the seizure Mr. Chism has offered to place the valuation at 1·60 dols. a hundred, which the customs authorities have declined to accept. Mr. Chism has since increased his valuation figure to 1·75 dols. per hundred, and the Government is considering whether it will release the paper at that figure, or hold it for yet higher valuation.

The Canadian manufacturers believe that they have put an end to the entry of American paper at a low valuation, and they look for an immediate restoration of prices on paper in the Dominion.

International Fibre Chamois Co., Ltd.

Meetings of the creditors and shareholders of this company were held on Tuesday at the Carey-street offices of the Board of Trade, before Mr. Winearls (assistant receiver).

The company was formed in March, 1896, with a capital of £35,800, to take over a business started ten months previously for the sale of fibre chamois, a wood fibre prepared by a patent process, and used very largely for ladies' dress interlinings.

The failure was attributed by the managing director very largely to change of fashion, and by the secretary to mismanagement from the inception of the company.

The Chairman further reported that the company was in difficulties in the beginning of 1897, notwithstanding which an agreement was entered into last summer for the purchase by this company of similar American and Canadian companies, to whom debentures charging the English and other property had been given in respect of the purchase money. No accounts had been filed, but a draft statement showed assets £1,274, unsecured claims, £4,500, debenture bonds, £4,716, a creditors' deficiency of £7,965, and a total deficiency to the contributories of £38,270. There were several matters in connection with the company calling for investigation, and they would receive attention at the hands of the department.

Resolutions were passed for the official receiver to act as liquidator and wind up the company in the usual manner.

MR. H. B. LEGGE has commenced business as a paper manufacturers' agent, at 37, Walbrook, London, E.C., under the name of H. B. Legge & Co.

AN ACCIDENT occurred to Samuel Hall, paper finisher, at Heap Bridge, last week, whilst following his employment at Messrs. Duxbury and Sons' paper mill.

PREPARATION OF RESIN SIZE UNDER PRESSURE.—A patent has been recently taken out for the preparation of a resin size for paper, containing unsaponified resin, under pressure. The resin soap is made under a steam pressure of ten atmospheres, at a temperature of 100 to 200° C., and the mass is constantly shaken. The proportions of resin, caustic alkali, and water depend on the result required, but an excess of resin must be used. It is claimed that by this method the amount of free resin is increased and that less alkali is needed.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports o London, Liverpool, Manchester. Runcorn, Fleetwood, Preston. Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams.

Telegrams—"STONHILL, LONDON."

CHEMICALS.—The market continues dull and new business is not very extensive. The advance in CAUSTIC SODA is well maintained, 70 per cent. standing at £7 to £7 2s. 6d., and CAUSTIC BOTTOMS at £4 7s. 6d. SODA ASH, Ammonia 58 per cent. is quoted £4 to £4 2s. 6d. at works, and £4 5s. f.o.b. Liverpool; Carbonated 58 per cent. stands at £4 10s., and Caustic 57-58 per cent. £4 15s. f.o.b. Liverpool. SODA CRYSTALS are scarce at £2 17s. 6d. on rails at works. BLEACHING POWDER is without change at £5 2s. 6d. to £5 5s. for soft wood and £6 to £6 5s. for hard wood f.o.b. Liverpool. RECOVERED SULPHUR is firm at £4 15s. to £5. ALUM is quoted at £4 17s. 6d. to £5 for loose, £5 2s. 6d. for lump, and £5 10s. for ground on rails, Manchester. SULPHATE OF ALUMINA stands at £4 5s. to £4 10s. per ton. HYPO-SULPHITE OF SODA, f.o.r. Tyne, in 10-ton lots at £5 shows an advance of 5s. In foreign chemicals there is no change to report.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½%	5	5 0
,, ,, barrels	...	,, ,,	2½%	5	15 0
,, ,, tierces	...	,, Hull	2½%	5	2 6
,, ,, ,,	...	Goole	2½%	5	2 6
,, ,,	...	f.o.b. Glasgow	2½%	5	2 6
Alum Lump) ,,	...	f.o.b. Liverpool	2½%	4	12 6
,, ,, barrels	...	,, ,,	2½%	4	15 0
,, ,, tierces	...	,, Hull	2½%	4	12 6
,, ,, ,,	...	Goole	2½%	4	12 6
,, ,, ,,	...	London	2½%	5	2 6
,, ,,	...	f.a.s. Glasgow	2½%	4	17 6
Alumina Sulphate	...	f.o.b. Tyne	net	3	11 3
Aluminoferric Cake, slabs		Liverpool ...	...	3	15 0
,, ,, tierces		,, ...	...	3	2 6
Alumina Cake, ... slabs		Glasgow ...	...	3	10 0
Blanc Fixe	...	f.o.b. Tyne	net	6	17 6
Bleach, ...	...	,, ,,	net	6	0 0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5 0
,, (hard wood)	...	f.o.b. Liverpool	net	6	0 0
,, (soft wood)	...	landed London	net	6	12 6
Borax (crystals) ...	...	... ...	net	14	10 0
,, powdered ...	...	... ...	net	15	0 0
Chloride of Barium	...	f.o.b. Tyne	net	6	15 0
Caustic White 76%	...	f.o.b. Liverpool	net	8	15 0
,, 74%	...	,, ,,	net	8	10 0
,, 70%	...	,, ,,	net	7	10 0
,, 70%	...	f.o.r. Lancs.,	net	7	7 6
,, 60%	...	f.o.b. Liverpool	net	6	10 0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5	15 0
,, 60%	...	f.o.b. Liverpool	net	5	17 6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4	7 6
Soda Ash, Carbonated 58%		f.o.b. Liverpool	net	4	12 6
,, ,, 48%		,,	net	4	7 6
,, ,, 58%		f.o.r. Widnes	net	4	10 0
,, ,, 48%		,, ,,	net	4	5 0
,, Ammonia 58%		f.o.b. Liverpool		4	5 0
,, ,, 48%		,,		4	0 0
,, Caustic 48%		,,		4	12 6
,, ,, 57-58%		,,		4	17 6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5	0 0
,, 10-ton lots		ex ship Liverp'l net		5	5 0
Oxalic Acid		f.o.b. Liverpool 3½%	per lb	0	
Salt Cake		on rail. In bulk		1	2 0
Sal Ammonia (1sts) ...		f.o.b. Liverpool		35	0 0
,, (2nds) ...		,,		33	0 0
Soda Crystals		f.o.b. Tyne net		2	15 0
,, ,, ...		ex ship Thames 2½%		2	15 0
,, ,, ...		f.o.b. Liverpool 5%		2	17 3
Sulphur, roll		f.a.s. works 2½%		6	5 0
,, flowers		,, ,, 2½%		7	5 0
,, recovered ...		,, ,, 2½%		5	0 0
Sulphate of Ammonia ,,		,, ,, 2½%		10	0 0
,, of Copper ...		,, Liverpool 5%		26	10 0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	5	0	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15	0
Blanc Fixe (c.i.f. London)		7	0	0
White Sugar of Lead		24	0	0
Zinc Oxide		28	5	0
Bleaching Powder		5	15	0

ESPARTO.—The market still experiences a fair enquiry for Spanish at full prices and a strong demand for African. Of the former it is difficult to get quotations as most sellers are fully engaged for old crop and find it rather premature to quote new.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—Fair to Good	... ...	£4	10	0	to	4	17 6
,, Fine to Best	... ...	5	5	0	..	5	10 0
Oran— Fair to Good	.. ...	3	17	6	..	3	0 0
,, First Quality	... ..	3	1	3	..	3	2 6
Tripoli—Hand-picked	... ..	2	18	9	..	3	1 3
,, Fair Average	... ..	2	15	0	..	2	16 3
Bona & Philippeville	... ..	3	3	9	..	3	6 9

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
4833 bales	Agulias	Guardbridge Paper Co	Dundee
450 tons	Bougie	H. Ottomann	Glasgow
389 ,,	Gabes		London
762 ,,	Oran		Fleetwood
3388 trusses	,,		Grangemouth
551 tons	Sousa		London

CHEMICAL WOOD PULPS.—The Chemical Wood Pulp market is in a depressed condition, offers being freely made and paper-makers slow to conclude contracts. Prices for SULPHITE are rather easier. SODA pulps are fairly firm.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common		£8	12	6	to 9	0	0
,, Superior ,, ...		9	5	0	,, 9	10	0
,, Bleached, ...		11	10	0	,, 15	0	0
SODA, Unbleached, Common ...		8	5	0	,, 8	10	0
,, Extra...		8	15	0	,, 9	5	0
,, Bleached		10	10	0	,, 12	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....			Kr. 160
Sulphate, f.o.b.	Kr. 120	to	Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.	to	25.
,, Bleached	31.	,,	36
SODA, Unbleached	21.50	,,	22.50
,, Bleached	27.	,,	35.
SULPHATE, Unbleached	21.50	,,	22.50
,, Bleached	27.	,,	35.

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached	$1.62	to	2
,, SODA Bleached	1,70		2
FOREIGN SODA, Unbleached ...	2.15		2.10
,, ,, Bleached	2.70		2.80c.
,, SULPHITE, Unbleached	2.30	,,	2.75c.
,, ,, Bleached...	3.25	,,	3.30c.

MECHANICAL WOOD PULPS.—The market is dull. Scandinavian makers find that enquiries are slow, and have consequently lowered their rates. There is no

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doubt that the large arrivals from the United States and Canada must to some extent lessen the demand for the Scandinavian product. From the following list of imports it will be seen that shipments of American pulp have been received from Philadelphia, Boston, Portland and Bucksport, the latter being a very heavy consignment amounting to 53,530 bales.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen,	Dry	£6	10 0
Pine,	Dry	£4 5 0 to 4	12 6
,,	Moist	2 2 6 ,, 2	7 6
Brown,	Dry	4	15 0
,,	Moist	2	10 0

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt

Pine Pulp, 50% moisture, ordinary ...	Frs. 11.	to	12.
,, ,, fine ...	12.50	,,	13.
,, dry, ordinary	11.50	,,	11.75
,, ,, fine	11.75	,,	13.
Aspen, ,, ,, ...	16.	,,	17.50
Half-Chemical Brown, 50% moisture	10.50	,,	11.
,, ,, dry ...	12.50	,,	13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
15 cases	Philadelphia		London
22 brls.	Halifax	Lumley and Co.	,,
5 bales	Rotterdam		,,
1881 rolls	Philadelphia	Henderson, Craig	,,
699 bales	Boston		,,
31 brls.	Ghent		,,
89 bales	Rotterdam		,,
896 ,,	Antwerp		,,
5850 ,,	Drammen	R. Lloyd Ltd	,,
5123 ,,	Stenkjaer	Johnsen and Jorgensen	,,
320 ,,	Gothenburg	W. G. Taylor & Co	,,
320 ,,	,,		,,
68 ,,	,,	Wenham and Co	,,
56 ,,	,,	R. L. Lundgren	,,
17 ,,	,,	Spicer Bros	,,
23 ,,	,,		,,
21 ,,	,,	G. F. Green	,,
272 ,,	,,	H. Pearsall	,,
68 ,,	,,	Henderson, Craig	,,
688 ,,	St. John's		Liverpool
1962 rolls	Boston		,,
39 bales	Rotterdam		,,
170 ,,	Gothenburg		,,
1169 ,,	Portland, Me.		,,
316 ,,	Gothenburg		Hull
4340 ,,	Drontheim		,,
1206 ,,	Christiania		,,
289 ,,	Hango		,,
876 tons	Drammen		Manchester
53530 bales	Bucksport	Wertheim and Co	,,
2111 ,,	Gothenburg		,,
240 ,,	Rotterdam		,,
136 ,,	Gothenberg		Glasgow
619 tons	Drammen	Clyde Paper Co	,,
498 bales	Philadelphia		,,
1196 ,,	St. John's		,,
2000 ,,	Drontheim		Leith
229 rolls	New York		,,
121 bales	Copenhagen		,,
384 ,,	Gothenburg		Granton
80 ,,	Drontheim		,,
5268 ,,	Drammen		Preston
895 ,,	Skein		,,
1225 ,,	Fredrikshald		,,
2400 ,,	Christiansand		,,
170 ,,	Skein		Dundee
40 ,,	Christiania		Grangemouth
1000 ,,	Christiansand		,,
80 ,,	Hommelvik		,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	896 bales	HOLLAND ...	373 bale
,, ...	31 brls.	NORWAY ...	29677 ,,
CANADA ...	1884 bales	,, ...	1497 tons
,, ...	22 brls.	U.S.A. ...	55896 bales
DENMARK ...	121 bales	,, ...	15 cases
FINLAND ...	289 ,,	,, ...	4072 rolls

FOREIGN RAGS.—The shipments of foreign rags from France and Belgium are fairly good. Other continental countries report trade quiet. British imports during the past week were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
12	Bremen	Hull	52	Delfzyl	Goole
50	Rotterdam	,,	333	Boulogne	,,
205	Ghent	,,	215	Antwerp	,,
54	Konigsberg	,,	25	Hambro	Grimsby
37	Christiania	,,	64	Rotterdam	,,
257	Copenhagen	,,	118	Antwerp	,,
160	Rouen	,,	591	Dieppe	,,
35	Harlingen	,,	100	Lisbon	Liverpool
45	Amsterdam	,,	81	Bordeaux	,,
146	,,	,,	14	Philadelphia	,,
63	Hambro	,,	6	New York	Bristol
37	Calais	London	183	St. Nazaire	Newhvn
180	Konigsberg	,,	99	Caen	,,
14	Treport	,,	17	Konigsberg	Leith
288	Ghent	,,	1	Antwerp	,,
91	Ternuzen	,,	24	Hambro	,,
87	Hamburg	,,	6	Bordeaux	,,
47	Amsterdam	,,	173	Ghent	,,
111	Ghent	Goole	16	Amsterdam	,,
55	Dunkirk	,,	49	Jersey	Southampton
63	Hambro	,,	67	Cherbourg	,,
84	Amsterdam	,,			

Totals from Each Country:

BELGIUM ...	1111 bales	HOLLAND ...	630 bales
CHANNEL Isles	49 ,,	NORWAY ...	37 ,,
DENMARK ...	257 ,,	PRUSSIA ...	251 ,,
FRANCE ...	1626 ,,	SPAIN ...	100 ,,
GERMANY ...	274 ,,	U.S.A.	20 ,,

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope coils)	8/0	Not ree from wood	5/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	10/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No 1 6/-: No. 11	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London

SPFFF and SPFF	17/0	LFB (Blue)	8/0
SPF	11/0	CSPFFF	14/0
FF	8/0	CSPFF	10/0
FG	8/6	CFB (Blue)	6/0
FFX	7/0	CFX (Coloured) ...	4/0

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linens	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cuttings	21/0
prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

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FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/6
II 15/6; III ...	9/6	Bl e Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ..	3/6	,, Stay ..	15/0

PRUSSIAN RAGS.

O.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF	12/6	Jute I	3/0
FG	10/0	,, II...	2/0
LPB	8/0	Rope I...	8/6
FF	5/6	,, II ...	6/0

NORWEGIAN RAGS.

O.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	2nd Canvas ...	7/0
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/0

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* At Smyrna and Salonica.

HOME RAGS.—LONDON: Business fairly good.—BRISTOL: Steady demand.—MANCHESTER: Fair enquiry.—EDINBURGH and GLASGOW: Trade good; prices unchanged.—DUBLIN: Market quiet.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/0
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected) ...	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/0	Gunny	2/0-2/3

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	2/6-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/6
Outshots	12/0	W. Manilla Rope ...	7/0
Mixed Firsts...	14/0	Tarred Manilla Rope	5/9
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Canvas (best)	15/0	Bagging...	2/3
2nd	8/	,, (clean)...	3/0-4/0

GLASGOW.

Fines	12/6-16/0	Canvas No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues	3/3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	9/0

DUBLIN.

White Cuttings ...	16/0	Mill Bagging	6
Fines	9/0	White Manilla ...	6/
Seconds	3/6	Tarred Hemp	6/
Light Prints	2/6	Rigging	10/
Black do.	1/6	Mixed Ropes ...	

STRAW PULPS.—The market keeps firm. The imports this week included 26 bales from Amsterdam, landed London; and 47 bales from Hamburg, landed Leith.

Prices, c.i.f. London, Hull or Leith

German, dry, No. 1	£14	0	0
,, No. 2	£13	0	0

WASTE PAPERS.—There is a steady demand for waste papers; prices firm.

Cream Shavings ...	10/0	Small Letters ...	3/0
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/3
White Printings ...	7/0	Light Browns	3/0
White Waste ...	1/9	Dark ,, ...	2/0
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/6
Blue Paper	2/0	Strawboard Cuttings	1/3
Crushed News	2/0	Jacquards	2/0

For Export: 2s/- per ton extra.

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common ...	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections ...	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings ...	£3 0 to £4 0

STRAW.—Prices:

Oat Straw, ...	c.i.f. London	42/0;	f.o.r. Goole, 42/0
Wheat ,, ...	do.	44/0;	do. 40/0
Rye	do.	57/6;	do 57/0

STARCH.—Market steady; prices unchanged.

F.o.r. London, less 2½%

Maize—Crisp, £9 15/-; Pearl, £6 5/-; Powder, £6 15/- Special £14.

Farina—Prime, £10; B.K.M.F., £13 10/-.

Delivered, less 2½%:

Rice—Special (in chests), £20 0/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£15

SIZING.—The demand for Sizing is good, and as stocks in users' and dealers' warehouses are light there is no probability of lower prices for the next few months. Holders of B.A. Pieces are hoping for an advance, but as Buffalo Hide Shavings are in plentiful supply, at comparatively low prices, they will be wise to meet the market. There is an excellent American demand.

English Gelatines per cwt.	90/0	to	120/0
Foreign ,, ...	70/0	,,	100/0
Fine Scotch Glues	45/0	,,	60/0
Long Scotch Glues	35/0	,,	40/0
Common Black ,, ...	25/0	,,	28/0
"Town" Glues	38/0	,,	45/0
"Bone" Glues	26/0	,,	30/0
Foreign Glues	28/0	,,	35/0
Bone Size	5/6	,,	10/0
Gelatine Size	6/6	,,	10/0
Dry B.A. Pieces	50/0	,,	55/0
,, English Pieces	35/0	,,	45/0
Wet ,, ,, ...	8/6	,,	9/0
,, Sheep Pieces	3/0	,,	4/0
Buffalo Hide Shavings	32/0	,,	40/0
,, Picker Waste	32/0	,,	35/0

ROSIN.—There is a good demand for low grades, but fine qualities have a downward tendency. Stocks of all sorts at public wharves in London, 7,600 barrels as against 8,992 barrels for the previous year.

B,C	D	E	F	G	I	K	M	N	WC	WW
4/9	5/-	5/3	5/4½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS. — Moderate enquiry; prices steady.

Mineral Black ...	cwt.	3/6	PASTE COLOURS with
do. superior ...	,,	4/0	60% of colour, as follows
Pure Ivory Black	,,	12/0	Orange Pulp ... cwt. 40/0
Ochre	,,	2/3	Golden Yellow Pulp 30/0
French J. C. Ochre	ton	60/0	Lemon ,, ,, cwt. 30/0
Chrome (pure) ...	cwt.	40/0	Prussian Yellow ,, 36/0
Red Oxide	,,	4/6	Green (free of arsenic 26/0
Umber, Devonshire	,,	50/0	Paste Blue, 20% ... 18/0
do. Turkish ...	,,	40/0	,, 33%; 26/0; 45% 45/0
Lamp Black ...	,,	5/0-7/6	Imperial Yellow (dry) 16/0
Ultramarine (pure)		35/0-45/0	(less 2½ % d/d)
Cochineal	lb.	4/9-2/0	

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METALS.—LONDON: Market for COPPER and TIN firm; LEAD steady. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	49	12	6	49	17	6
,, three months	49	17	6	50	2	6
Tough	51	15	0	52	5	0
Best selected	52	10	0	53	5	0
Strong Sheets	60	0	0	—		
TIN—						
Fine foreign, cash	64	2	6	64	12	6
,, three months	64	13	9	65	3	9
LEAD—						
Spanish...	12	8	9	12	10	0
English...				12	12	6

MINERALS.—The CHINA CLAY market is rather depressed, particularly in the lower qualities. Enquiry for FRENCH CHALK and TERRA ALBA is quiet. SNOWDRIFT is in steady request, and there is more demand for SATINITE.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or best at makers' works:

Superfine... ...	28/0 less 2½ %;	del. Lancashire...	38/0
Pottery Super.	24/0 ,,	,, ...	34/0
Ball Seconds ...	20/0 ,,	,, ...	30/
Seconds	15/0 ,,	,, ...	25/0
Thirds	11/0 ,,	,, ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/0 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 60/0, 66/0, 73/6, and 77/6 per ton, according to quality, less 2½ %.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool, I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 12/6 per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-.

Patent Hardening (2 ton lots) f.o.r. Lancs., £3 5/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.

Magnesite (in lump) 39/6 to 46/0 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.

Bauxite, minimum alumina. 60 %, 15/9 f.o.b.

Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.

Satinite, £3 to £3 6s. od., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/6 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0.

LIME.—The present price is 10/6 per ton f.o.r

NEW PATENTS.

APPLICATIONS.

2,852.—Improvements in fire-proofing woven fabrics or yarns composed of cotton or other vegetable fibres, wood pulp, paper, and other similar materials. J. Walker, W. Simpson, and T. Woodhead.

2,998.—Improvements in and relating to the decomposition of alkaline salts by electrolysis and in apparatus therefor. J. Greenwood.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

1897.

2,377.—Apparatus applicable to paper machines for drying the paper. Bottger.

24,083.—Manufacture of boards, plates, or sheets from leather pulp. Boult.

7,228.—Tanks and apparatus for use in connection with the same for the purification and treatment of sewage and impure waters. Strong.

W. FRIEDLAENDER,

60, Fenchurch Street,

Telegrams: "LANDFRIED—LONDON." LONDON, E.C.

Sulphite, Sulphate & Soda Pulps.

BLEACHED & UNBLEACHED,

IN PURE STRONG FELTY QUALITIES.

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Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	3750	886	1425
ARGENTINE	51	10	14
AFRICA	150	113	164
B. W. INDIES	10	—	—
BELGIUM	15	74	36
B. GUIANA...	17	—	—
B. COLUMBIA	9	—	—
CAPE COLONY	150	74	407
CANADA	9	108	—
CHINA	78	102	104
CHANNEL ISLES ...	—	—	11
EGYPT	—	200	—
FRANCE	550	184	6
GERMANY...	—	29	—
GREECE	—	—	7
HOLLAND...	83	21	13
INDIA...	434	199	99
JAPAN	478	43	10
MALTA	—	—	24
NEW ZEALAND ...	1536	564	388
PORTUGAL	5	—	77
S. SETTLEMENTS ...	—	137	19
SPAIN...	—	6	45
S. AMERICA	—	3	59
U.S.A....	9	—	258
W. INDIES...	422	8	9

FROM GLASGOW.

	Printings. Cwts.	Writing. Cwts.	Various. Cwts.
AUSTRALASIA	806	—	171
CHINA	100	—	—
CAPE COLONY	104	—	10
CANADA	—	45	432
B. GUIANA...	—	18	66
INDIA	84	335	302
JAPAN	688	—	—
NEW ZEALAND ...	47	27	93
W. INDIES	125	28	23

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
BELGIUM	1978	—	—
DENMARK...	358	—	—
FRANCE	638	31	—
FINLAND	10	—	—
GERMANY	2731	24	—
HOLLAND	28272	27	—
NORWAY	3204	—	208
PRUSSIA	116	—	—
SWEDEN	6284	—	428
U.S.A....	5565	282	275

Including the Following:—

Quantit	From	Importer	Port
50 bales	Boston	Hazell, Watson & Co	London
478 ,,	,,	Spicer Bros	,,
112 ,,	,,	B. Galloway	,,
46 ,,	Copenhagen	Puckert & Co	,,
112 ,,	Gothenburg	J. Eberstein	,,
118 ,,	,,	G. Schenkenwald & Co	,,
19 ,,	,,	J. Spicer & Sons	,,
381 ,,	,,	J. Eberstein	,,
349 ,,	,,	Skarbiacka & Co	,,
58 ,,	,,	W. D. Edwards	,,
49 ,,	,,	Alsing & Co	,,
150 ,,	,,	H. S. Reed & Co	,,
14 ,,	,,	L. C. Lockwood	,,
18 ,,	,,	A. L. Lundgren	,,
15 ,,	,,	R. L. Lundgren	,,
143 ,,	,,	E. B. Sabel	,,
6 ,,	,,	Crabb & Co	,,
5 ,,	,,	Rosenberg & Co	,,
8 ,,	,,	Cookson & Co	,,
167 ,,	,,	Brown, Brough & Co	,,
626 ,,	,,	R. Saunders & Sons	,,
10 ,,	,,	F. Claybon & Co	,,
7 ,,	,,	Spicer Bros	,,
354 ,,	,,	C. Poulter	,,
6 ,,	,,	M. Relph & Co	,,
60 ,,	New York	Spalding & Hodge	,,
692 ,,	,,	Grosvenor, Chater & Co	,,
383 ,,	,,	J. Dickinson	,,
70 ,,	,,	Lepard & Smith	,,
58 ,,	,,	Schenkenwald & Co	,,
4 cases	Philadelphia	Henderson & Davies	,,

In the course of the next LEIPZIG FAIR,

THE USUAL

Paper and Stationery Trades' Exhibition

OF THE PAPER UNION,

WILL BE HELD IN THE

MERCHANTS' CLUB HOUSE, the dates being from the 8th to the 11th March.

THE Exhibition is to include the Paper, Stationery, and Fancy Leather Trades, the Book Trades and the Allied Industries. Foreign Dealers, who may think of visiting the next Leipzig Fair, or who are travelling in Germany about that time on business, ought not to omit this Exhibition from their programme, as it promises to offer an extensive selection of new and interesting products. 3113

Enquiries should be addressed to the Chairman of the Union, Mr. BRUNO NESTMANN, LEIPZIG.

JAMES KENYON and SON,

DERBY STREET MILLS,
BURY, LANCASHIRE.

ALL FELTS for Papermakers.

Telegrams: "KENYON, BURY."

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SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries.

OFFICES—58, SHOE LANE, LONDON, E.C.

Situations Vacant.

M. G. MACHINEMAN Required for mill in Lancashire.—State wages and where last employed to "J.K.," No. 7,208, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7208

REELERMAN.—Wanted, smart young man thoroughly used to Rotary Reeler and Slitter. One experienced in cutting printings preferred.—Apply Paper Cutting Co., 90, Goswell-road, E.C. 7211

TRAVELLER Wanted by a firm of paper agents. Must be well up in foreign papers, and have a good connection amongst wholesale trade.—Address, No. 7,196, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7196

WANTED, an Experienced Head ENGINEER for a Paper Mill; he must be competent to take charge of the whole of the Papermaking Machinery, and must have a thorough knowledge of steam engines and boilers.—All particulars, stating age, previous experience, and wages required, should be sent to Box 260, T. B., Browne's Advertising Offices, 163 Queen Victoria-street, London, E.C. 7204

Situations Wanted.

ADVERTISER (28), with about 10 years' experience in makers' and agents' London offices, seeks agency, or London engagement where industry, conscientiousness, and business aptitude, would meet with a reasonable reward.—Address, No. 7,181, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7181

FOREMAN MILLWRIGHT wants situation in a paper mill or bleach works; 20 years' experience; can give good reference.—Address, No. 7,210, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7210

Machinery.

FOURDRINIER Papermaking Machine, must be strong, modern, and in good order; 80 to 106 inches of paper. Fair price for a good machine.—Address, K., No. 7,202, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C.

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British Wood Pulp Association.

To the Editor of the WORLD'S PAPER TRADE REVIEW

SIR,—The committee of the British Wood Pulp Association have called our attention to the letters of Messrs. Ince, Colt and Ince, appearing in the *World's Paper Trade Review*, of the 28th January last, and which have been widely circulated by you through the medium of your paper both in this country and abroad to the serious injury of our clients.

In Messrs. Ince, Colt and Ince's letter of the 18th December, they say that "no excuse can be found for gentlemen who wilfully try to deceive secretaries of foreign associations by gross misstatement;" and again in their letter of the 21st December, they say "but it becomes a serious matter when such statements are printed in trade journals with the object of deceiving foreign trade associations"

We are instructed to call upon you to forthworth write us a letter absolutely acquitting our clients of all *mala fides* in the matter, and containing an ample apology for the gross imputations which have been made and circulated by you as aforesaid, and to insert the same at your own expense in the *World's Paper Trade Review* of the 11th inst., and in the next issue of *Wood Pulp*—failing which, our instructions are to commence an action against you for libel forthwith.

Yours obediently,
MUNNS & LONGDEN.

8, Old Jewry, E.C.
February 2, 1898.

The following is a copy of our reply, dated February 3rd, 1898, to Messrs. Munns and Longden:—

GENTLEMEN,—We beg to acknowledge your letter of the 2nd inst. in reference to the letters written by Messrs. Ince, Colt and Ince, which were published in the *World's Paper Trade Review*, dated January 28th, 1898.

From a communication—which will be inserted in to-morrow's *Review* in the form of an apology—received this morning from Messrs. Ince, Colt and Ince, we find that the statements published in our last issue were incorrect. A copy of our paper containing the apology will be posted you in due course.

Knowing the gentlemen serving on the committee of the Wood Pulp Association as we do, we have not for one moment questioned their honesty of purpose, and deeply regret that any such impression has been created.

As a matter of fact we do not—in common with newspapers generally—hold ourselves responsible for the opinions expressed by our correspondents. The grievance of your clients is, in our opinion, against Messrs. Ince, Colt and Ince, the authors of the letters.

We trust that this explanation, together with the insertion of Messrs. Ince, Colt and Ince's apology, will satisfy your clients as acquitting them of all *mala-fides*.

"The Lost Wire."

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—I was greatly amused in reading in one of your recent issues a paragraph under the heading of "The Lost Wire." The incident occurred to the writer, although not exactly as your correspondent related it. Had it been a web of linen or cotton instead of one of wet pulp, it might have carried the wire over all the windings of the cylinders on to the reel. It would, however, have been in the sight of anyone, and therefore not lost at all.

I had been running the first machine at Esk Mill in the year 1851, belonging to the late Mr. Brown. I had gone to the dry end to take off a sheet to weigh, the only way we had to regulate the weight of our paper, when I heard a clink at the calenders, indicating a break in the web. I went to see what was up, and found the pulp running into the saveall, and going round by the lifter wheel, no mess, but no sight of the wire anywhere.

I ultimately found it after taking up the boarding covering in the pit, nicely folded up, without a crease or wrinkle in it, in the pit just under the reel. It had burst at the seam just as it passed through the couchers, travelling through the first and second press rolls, then turned down on to the wet felt, and was carried by the felt that at that time ran all the length of the pit under the cylinder, and no great length either when I tell you that there were only four small cylinders, three small calenders—a 10-inch roll—and the third was seldom down, save when the foreman would come in a hurry and say "Robie, pit doon that roll, it's superfine noo." That was all the difference between fine and superfine in those days. Machine 56-inch, speed 25 feet per minute, no intermediate rolls—"Those were the days we made paper."

Yours faithfully,
ROBERT MC'NEIL.

Cardiff, February 12th, 1898.

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In order to avoid the necessity of breaking the circuit by hand to stop the ringing of the bell with the attendant risk of omitting to reset the device, provision may be made for automatically cutting out the bell after it has given the alarm, by means of conductors and a similar lever arrangement placed nearer the reeling end of the papermaking machine, according to the length of time the bell is required to ring, and which lever would break the circuit on the broken end of the web passing it. When the fresh web of paper is again passed over the machine this lever would close the circuit and the alarm bell be free to act.

An alternative method of automatic cut off which would suit some papermaking machines better than the previous is as follows:—One of the leading or guide rolls on the papermaking machine is supported by springs in suitable brackets (as usually in use on a papermaking machine) suitable electric connections being fitted to roll journal and bracket. The strain of the paper passing over this roll compresses the springs, thus closing the circuit. On the broken web end reaching this roll the strain is removed and the springs expand to their normal position, thus breaking contact and stopping the bell. When the fresh web of paper is again passed over the machine the renewed strain on the roll would again close the circuit and the alarm be free to act.

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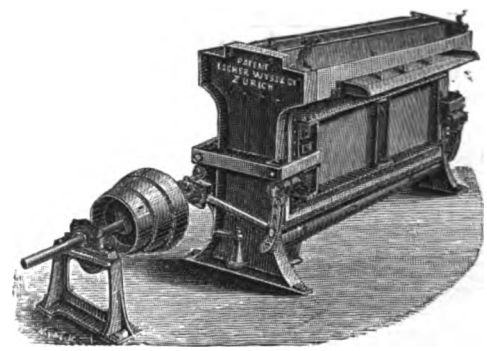

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Karl Krause, Leipzig.

The name of Karl Krause is so well known in connection with the manufacture of machines for use in every department of the papermaking, printing, and allied trades, that we need make no apology for calling the attention of our readers to the handsomely got-up catalogue of paper cutting machines that has just been issued by the eminent German firm. The book, an oblong quarto, is printed on a fine toned paper, the letterpress being worked in an olive ink, and the ornamented borders that surround each page in a pale green tint. Full page illustrations are given of twenty-five different makes of paper cutting machines from which to select for the fulfilment of any particular requirement, and comprising a range of appliances that begin at the simple hand cutter and go up to the large machine for cutting web paper into sheets, with a splendid range of guillotines between. Some of the cutters are specially built for trimming several sides at once, others for label cutting, etc., and needless to say their construction is of a high-class throughout, whether they be intended for the use of the small employer or the great paper mill, or printery. Paper making machines are now reaching a high state of efficiency, and at the works of Karl Krause they do not intend to be left behind in the race for the first place. Very full particulars of each machine are given in the catalogue, which is enclosed in a handsomely printed cover in which browns and greens have been effectively used on a sea green grained paper to produce a striking design, which we have endeavoured to reproduce herewith in black and white, which gives but a faint impression of the original. We believe that copies of the catalogue may be had on application to the firm at their Leipzig works, or to the London agents, Kampe and Co., 76, High Holborn, E.C.

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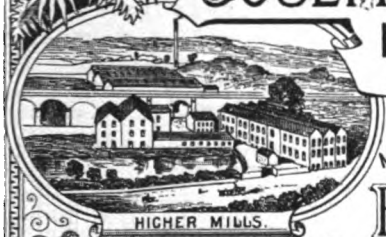

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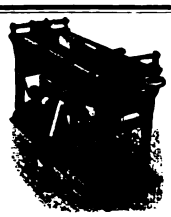

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3 ,,	,,	P. Ruttmann	,,
15 ,,	,,	Stiner and Co	,,
20 ,,	,,	J. W. Hampton	,,
15 ,,	,,	Merchants' Despatch	,,
7 ,,	,,	Kupfer Bros	,,
4 ,,	,,	Sheldon and Co	,,
17 ,,	,,	,,	,,
10 ,,	,,	Kauth, Nachod & Co	,,
8 ,,	Glasgow	Baldwin Bros & Co	,,
2 ,,	Bordeaux	E. Kimpton	,,
82 ,,	Hamburg	Dingelstedt and Co	,,
3 ,,	,,	S. Ascher	,,
24 ,,	,,	Dietzen and Co	,,
17 ,,	,,	H. S. Leclercq	,,
16 ,,	,,	Amswick and Co	,,
75 ,,	,,	De Jonge and Co	,,
3 ,,	,,	Merchants Despatch	,,
12 ,,	,,	Hartung and Co	Philadelphia
1 ,,	Havre	Downing and Co	New York
50 ,,	,,	Druckleib and Co	,,
10 ,,	,,	American Tobacco Co	,,
1 ,,	,,	Emmerich and Co	,,
11 ,,	Liverpool	E. Morgan Sons	,,
10 ,,	,,	G. J. Kraft	,,
3 ,,	,,	P. H. Petry	,,
7 ,,	,,	B. and O. Meyer	,,
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102 ,,	,,	A. Kazenst in	,,
309 ,,	Leghorn	Jessup and Moore	,,
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5 ,,	Liverpool	J. B. Small	,,
18 ,,	,,	R. W. Carroll	,,
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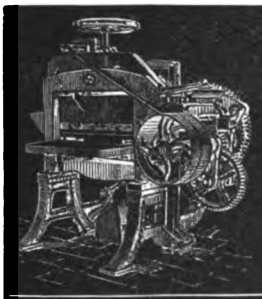

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Ca	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
D	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
Da	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
E	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
Ea	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
F	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
Fa	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
G	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
Ga	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
H	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
Ha	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
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The World's Paper Trade Review

A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 8. LONDON: FEBRUARY 25, 1898. EVERY FRIDAY. PRICE SIXPENCE.

Paper Trade of Canada.

The trade of Canada continues to expand in an extraordinary manner, and it is only natural that the paper industry should participate in the general prosperity. Some idea of the rapid development may be obtained from the figures relating to total exports and imports for January, the former showing an increase of 4,111,000 dols., and latter 2,421,000 dols. The total trade returns for the past seven months show an increase of 31,692,721 dols.

During the last three years the exportation of British paper to Canada has not fluctuated to any great extent. In printings, writings and envelopes an improvement is to be noted, last year's figures being 19,356 cwts., of the value of £33,328, compared with 18,428 cwts., of the value of £32,882 in 1896, and 16,689 cwts., of the value of £31,078 in 1895. In "other kinds" of British paper exported to Canada last year there was a falling off: 1897, 3,302 cwts., £7,633; 1896, 4,120 cwts., £10,223; and 1895, 4,103 cwts., £8,943.

The Canadian trade and navigation returns for the fiscal year ended 30th June, 1897, have recently been issued, and these show the imports of paper, etc., from the United States to be as follows: Albumenised paper, etc., 42,079 dols.; bags or sacks, 6,992 dols.; playing cards, 16,211 dols.; writing paper, 1,026 dols.; cardboard, 7,402 dols.; tarred paper, 6,948 dols.; paper not tarred, 818 dols.; wall paper, 81,987 dols.; leatherboard, 13,382 dols.; millboard (not strawboard), 11,853 dols.; collar cloth, 3,610 dols.; envelopes, papeteries, blank books and manufactures of paper, 232,931 dols.; printing paper, 41,652 dols.; ruled papers, 8,365 dols.; strawboard, 7,997 dols.; wrapping, 5,836 dols.; all other kinds of paper, 195,554 dols.

The exportation of paper from Canada, apparently, is only on a small scale at present, but there is every probability of an early development, as new mills are being erected and new machines installed in the works of established firms, thereby greatly increasing production, for which an outlet must be found in foreign markets. In the official returns relating to exports wall-paper only is mentioned, the value being given at 36,846 dols. Small lots of printing paper of Canadian manufacture have, we believe, found their way to Great Britain, but the quantity is not specified.

Amongst various developments, it may be mentioned that the Canada Paper Company has put in a new paper machine, and the Laurentide Pulp Company is putting up a very large paper mill. The programme of improvements contemplated in other mills is a large one. Paper will be pushed out of the mills this year at a rate which it will be utterly impossible for the home demand to keep pace with. The older manufacturers will have to increase the efficiency of their plant, lower the cost of production, and turn out more paper, or go out of business. Canadian manufacturers, it is reported, have recently had some good orders proffered to them by British paper agents, but they had to be declined because of inability to meet the price at which these customers could get the paper from American and other makers. Canadian manufacturers, however, are making strenuous efforts to be in a position to compete with the Americans in the British market. They feel somewha

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uneasy as to the policy that will be adopted by the International Paper Co. Although the union of manufacturers may do its best to keep prices in the United States from dropping to too low a level, it is apprehended that the syndicate will be willing to slaughter prices in the export market in order to keep the market healthy at home. There might therefore be times when considerable stocks of paper would be flushed off into Canada at a sacrifice to relieve congestion. Similarly, American paper might be sold at a loss in the United Kingdom to maintain prices at home. That would be rather unlucky for Canadian manufacturers just when they find themselves on the verge of an export trade.

The remedy suggested is an export duty on pulp wood. That would be incomparably more advantageous to Canadian mills than an increase in the duty on paper. A higher paper duty could not prevent prices from falling to an export basis, as the internal competition has already brought about overproduction, and is fast increasing it. The problem now is, not how to save the home market, but how to capture the export market?

Regarding the report that a paper mill is to be built in connection with the Sault Ste. Marie Pulp Company's mill, the Halifax *Chronicle* says: "If papermaking at Port Arthur (Sault Ste. Marie?), Western Ontario, for the English market can be successfully prosecuted, what is to hinder Nova Scotia also, with her plentiful supply of pulp wood, manufacturing paper for that market? We do not, of course, pretend to answer the question, because we have not the necessary data at hand on which to base an opinion, but the point is deserving of inquiry and consideration."

PAPER TESTING.

The report of the Charlottenburg Paper Testing Office (Berlin) for the year 1896-97, just published, shows an increased activity. There were 1,373 papers, 80 samples of stuff, five photographic mounts, one chemical pulp sample, three linen stuffs, and various other materials examined. Moreover, several other decisions were demanded as experts and as umpires among conflicting experts. As a proof of the great reputation of the office far beyond Germany, it can be seen that 27 enquiries were made from nine foreign countries, viz., Austria, Sweden, France, Holland, Russia, Switzerland, Great Britain, Italy and Chile. Though the chief object of the office is the testing of normal papers used by the public authorities, still we can see from the detailed report that many other most interesting questions were solved. There were 204 papers tested for resistance to crumpling and contents of ashes, and many special tests were required. Among others, the thickness, weight, nature, etc., of wood fibres, the existence of mechanical wood pulp, and a mechanical, chemical, and microscopical examination of fibres and their relations to each other were discovered. In the latter way 84 papers were tested, showing the great interest the paper trade takes in these examinations. Among the special tests were the determination of the length of fibre of two samples of mechanical wood pulp; the examination of two papers with the view of their being proof against rusting; comparative examination of a German and a Whatman drawing paper as regards tinting, washing, erasing, etc.

CULTER PAPER MILLS Co., Ltd.

The directors report that the amount at the credit of the profit and loss account for the year is £12,614 2s. 6d., which they recommend should be applied as follows:—£3,713 6s. 6d. in paying a dividend of 1s. 6d. per share on the old shares, making, with the interim dividend, 12½ per cent. per annum; £750 in paying 9d. each on the new shares; £3,981 to be carried to the credit of the works and property account; and £4,169 to be left at the credit of the profit and loss account. It is reported that the whole of the 20,000 new shares offered to the shareholders in the end of last year were readily taken up. The directors recommend that £6,800 of the £30,000 received as premium on the new shares should be applied towards the reduction of the works and property, and that the balance of the premium account be carried to the reserve fund, bringing it to £45,000.

HARTLEPOOLS PULP & PAPER Co., Ltd.

The report of the Hartlepools Pulp and Paper Co., Ltd., for the half-year ended January 31st, 1898, shows a net profit, after allowing for depreciation, of £3,504 12s. 3d., making with £816 14s. 1d. brought forward from the previous half-year, the sum of £4,321 6s. 4d. available for disposal. Out of this the directors recommend the payment of a dividend, free of income tax, at the rate of 10 per cent. per annum, absorbing £2,500, the placing of £1,000 to the reserve fund, and the carrying forward of the balance, £821 6s. 4d., to next account. The shareholders' meeting will be held in Manchester on March 4th.

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Electrolytic Bleaching.

Several interesting contributions on electrolytic bleaching have appeared in our German contemporary, the *Wochenblatt fur Papierfabrikation*, from the pen of C. F. Dahlheim. A recent contribution deals with electrolysers of the latest construction, the aim of the writer being to give a clear idea of the whole plant and process of electrolytic bleaching.

Fig. 1 shows an electrolyser as built at the present time by Siemens and Halske, Vienna, Austria. This apparatus has been improved after many experiments, and is now said to answer all requirements as to cheapness and durability. The prismatic vessel, with its

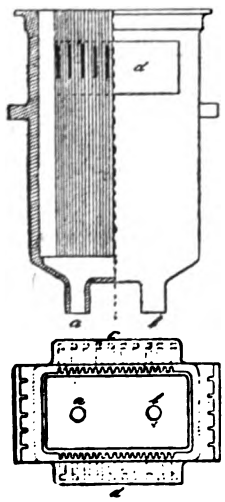

FIG I.

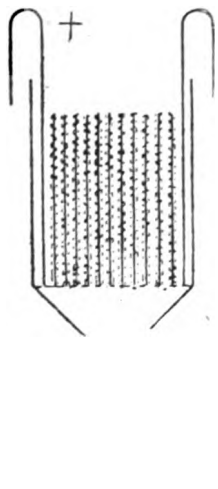

FIG. II.

rounded edges, consists entirely of hard, fine-grained earthenware. It has two solid extensions, to which to attach the inlet pipes *a* and *b*, and also two rectangular outlet pipes, *c* and *d*, which are connected with the interior of the vessel by the channels indicated by dotted lines in the plan, and the slits indicated by heavy lines in the half-open elevated view. The indentations shown in the plan along the two long inner sides of the vessel serve to hold the electrodes. The indentations in the two ends of the vessels are to accommodate the conducting wires. The electrodes consist of glass plates wound with platinum-iridium wire. The plates are set in the electrolyser one behind the other, as shown in Fig. 2. The plates, or rather wires, are not connected directly with each other, the salt solution circulating between the plates serving as the medium which establishes the contact. The two end plates consist of a web of platinum-iridium wire, and conduct the current into the vessel, the one at the left conducting the positive current, and that at the right the negative current. Each of the eleven inside plates shown in the drawing is isolated from its cell at the end by means of rubber, so that the electric current cannot pass around the plates, but is compelled to penetrate the liquid which circulates between the plates and their wires. All of the wires of the right side of each plate are therefore charged with positive electricity, and the wires of the left side of the plates with negative electricity.

The decomposition of the salt solution requires a certain tension, namely 2·5 volts; but in order to produce a corresponding number of amperes in the electrolyser, Siemens and Halske have, instead of the lowest limit below which the decomposition of the salt solution would be impossible, chosen 5 volts per cell. Let us suppose a loss of tension of 5 volts per electrolyser, and we obtain

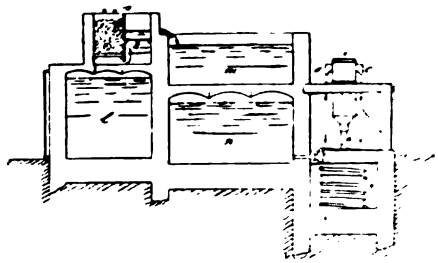

FIG. III.

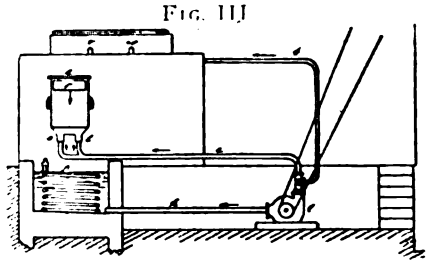

FIG. IV.

for an electrolyser with 10 cells, for instance $(5 \times 10) + 5 = 55$ volts. The number of amperes which can pass through the electrolyser at this tension depends on the concentration of the salt solution, and is with a solution of 10 per cent. about 100, at 15 per cent., 120; and at 20 per cent., 140 amperes. These figures, however, apply only to an average temperature of from 15 to 20 degrees C. The higher the temperature, the more amperes can pass through the solution, as, however, a high temperature assists the formation of higher stages of oxidation, as $NaClO_2$ and $NaClO_3$, the limit of 20 degrees C. must not be exceeded.

Fig. 3 shows an electrolytic plant in section. The box *s* in the left-hand corner at the top represents one of Dahlheim's salt dissolvers, with filter. The salt in the compartment at the left rests on filtering stones, or a perforated lead plate. Two shower pipes spray over the salt. The water penetrates the salt, and becomes more and more saturated with it the farther it proceeds downward; it passes through the perfora-

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tions in the lead plate, rises in the direction of the arrow, filters from below through the *z*, and flows off through the lead pipe *v* (and *w*, Fig. 4). The frame of the filtering cloth is rendered tight along the walls of the vat by means of strips of felt. More fresh salt can be put in at any time, so that the apparatus works uninterruptedly until it becomes necessary to clean it, which is done with the aid of a pipe and nozzle and a wash-out valve in the bottom. The salt solution flows from the filtering apparatus *s* into the mixer *m*, where it is diluted with water to the proper consistency, and is then discharged through a plug hole in the bottom into the storage tank *n*, whence it can be drawn off periodically through a lead joint into the vessel *p*. The latter contains a cooling coil of hard lead, and a short distance over it the electrolyser is attached to a wooden frame.

In order to better illustrate the process, let us now turn to Fig. 4, which shows the right side of the plant in elevation. Before proceeding, let it be said that Figs. 3 and 4 represent a plant which works with only one electrolyser of the largest type, requiring about 21 horse-power for its operation, and capable of producing 30 kilogrammes of chlorine, equivalent to about 100 kilogrammes of bleaching powder, in twenty-four hours. The principle of the plant remains always the same, and if larger capacity is required, it is only necessary to use more electrolysers, and to build the vats and tanks correspondingly larger. The induction pipes of the different electrolysers are in that case connected with each other by a common pipe.

After the vessel *p* has been filled with salt solution, the centrifugal pump *t*, which consists of hard lead, is set in motion. The pump sucks the liquid from *p* through the lead pipe *h*, and delivers it through the lead pipe *i* and the pipes *a* and *b* into the electrolyser *e*. In the latter the liquid circulates around the electrodes, is partly decomposed, passes through the slits in the wall of the electrolyser, indicated by heavy black lines in Fig. 1, and through the connecting channels, and returns through the outlet pipes *c* and *d* at both sides into the tank *p*. This circulation of the liquid continues until the solution contains the desired percentage of chlorine, whereupon the position of the three-way cock of the pump *t* is changed, and the finished bleaching liquor pumped from *p* through the pipe *k* into the reservoir *l* (see Fig. 2). This reservoir is provided with a scale and pointer, to indicate the level of the liquor in the interior, and an injector makes it possible to transfer the required quantity of bleaching solution from the reservoir to the bleaching engines. The dynamo may be situated near the electrolysers, or at any other convenient point. The electric current for the decomposition of the salt solution is conducted through cables, which may be laid under ground or carried along the ceiling of the building.

As the electrolysers consist only of earthenware, glass and platinum, and all of the other vessels of cement, the resisting power of the plant is excellent. Even lead and rubber are used as little as possible, thus obviating the danger of having particles of rubber or oxide of lead contaminate the bleaching liquor. The plant is so perfect that it leaves hardly anything to be desired, and justifies the hope that the bleaching powder may gradually have to give way to salt also in the paper industry, as it has already done to a very great extent in the textile industry. The dynamo of the electrolytic bleaching plant can also be used for lighting the mill, so that a special illuminating plant can be dispensed with.

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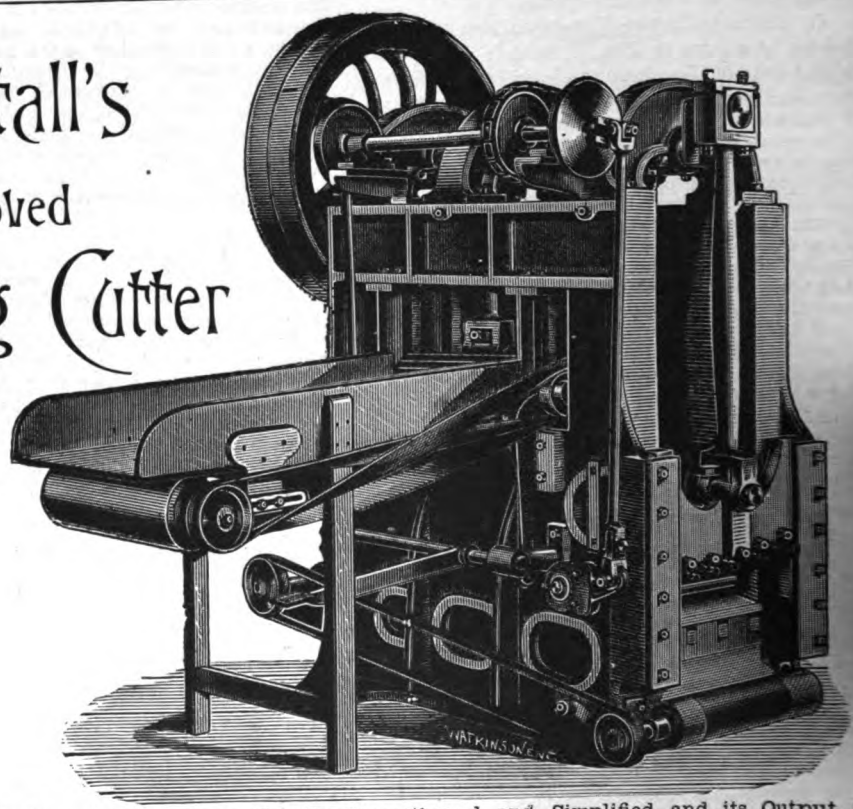

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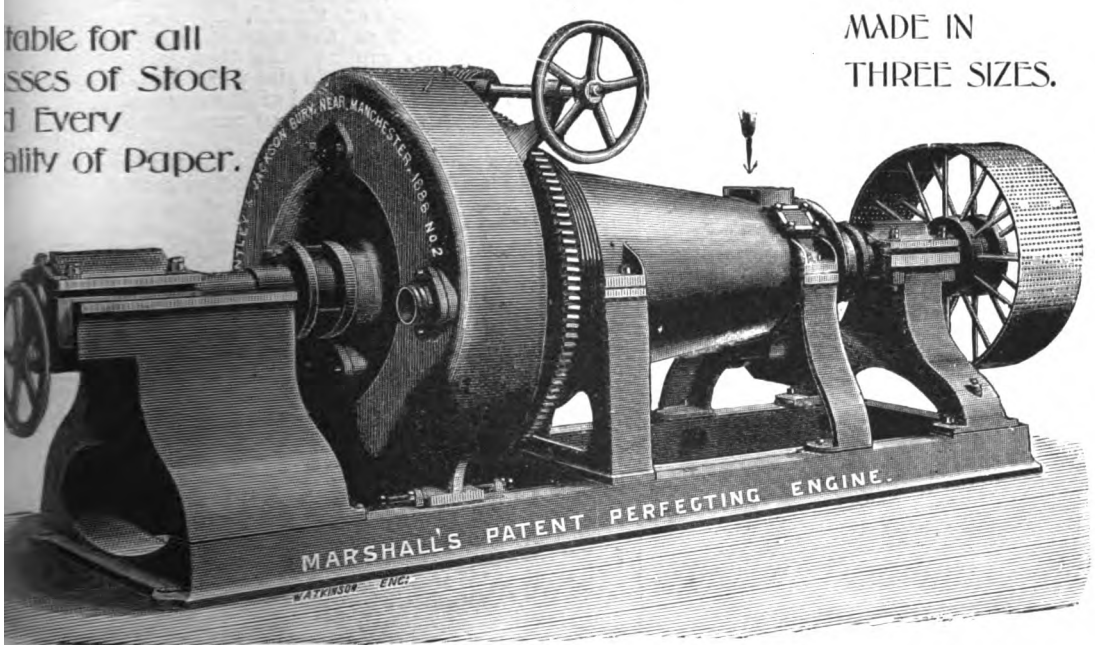

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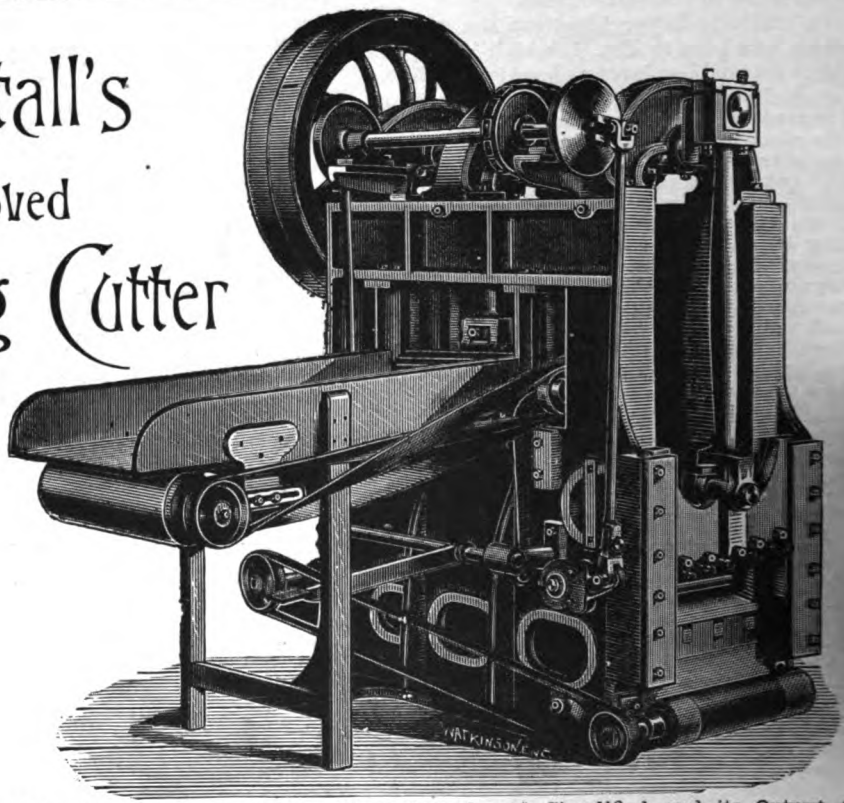

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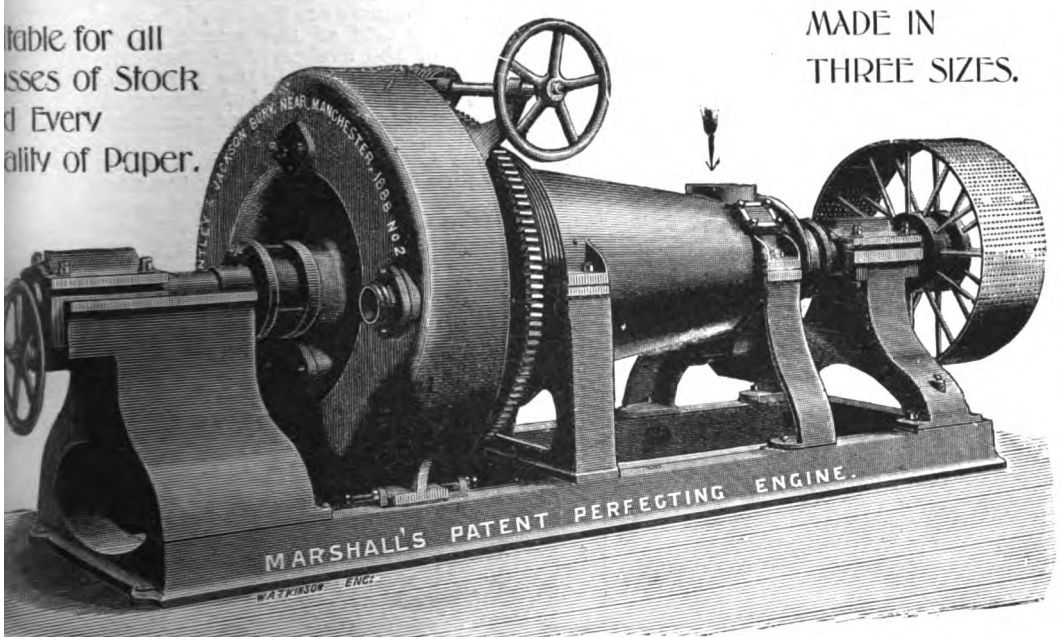

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Waste Sulphite Liquor.

Methods of Recovery and Utilisation.

The recovery of waste sulphite liquor and its utilisation is a subject which has a special interest to all manufacturers of sulphite wood pulp. Some time ago a prize of £500 was offered by the Papier and Zellstoff fabriken Unterkochen Wolfach, Germany, for a reliable treatment to prevent the deleterious effects of effluent waste sulphite liquor. This offer, in connection with the closing of some cellulose mills in the east of Germany, shows that no treatment has as yet been successful by which waste sulphite liquor can be discharged, in places not situated near rivers with ample water and a good fall, without deleterious effects.

An interesting paper bearing on the subject was delivered recently before the Society of German Cellulose Makers, by Mr. Siegmund Ferenczi, chemist, and the editor of our contemporary, the *Papier Zeitung*. His object was to show the various proposals put forth to deal with the recovery of the waste liquor and the results at present obtained.

The component parts of the average sulphite waste liquor have been ascertained by many chemists. The boiling and waste liquors of the cellulose mill Unterkochen, samples of which the company which owns the mill sent to all aspirants for the prize, are, according to statements furnished by the mill, composed as follows :—

Fresh Boiling Liquor.—3.20 total sulphurous acid SO_2, of which 1.76 is free sulphurous acid SO_2 and 1.44 sulphurous acid combined with CaO.

Waste Liquor.—Specific weight at 17.5 degrees C, 1.0545; water (at 105 degrees C), 88.70 per cent.; organic substances, 9.70 per cent.; mineral substances, 1.60 per cent. Ingredients of the mineral substances—Sulphate of lime, 0.24 per cent.; sulphite of calcium, 0.94 per cent.; sulphite of magnesia, 0.24 per cent.; magnesia in combination with organic acids, 0.13; silicic acid, alumina, ferric oxide and traces of alkaline salts, 0.05 per cent.

Aside from samples of these liquors, the company also sends each competitor a sample of the water of the Kocher river, taken from the bottom of the stream. This water is rendered cloudy by the abundant growth of a fungus, the *beggiatoja alba*. The appearance and properties of streams which have an abundance of these fungi, which are erroneously called algae, have been described by F. Zenk in his work, "The Pollution of Streams," as follows:—"The water, which has been polluted with large quantities of w and flows sluggishly, is of bad colour and cloudy consistenc nd where there are stron quantities of peculiar froth and on the bottom of such streams the chlorophyll-containing plants, which are peculiar to the water in a pure state, have been supplanted for the greater part by slimy, colourless algues. The excess of organic substances is capable of putrefaction, and does actually putrefy especially at higher temperatures under the action of the oxygen in the water. The development of sulphide of hydrogen from the foam and bubbles by their oxidation in the air, make life impossible to the lower fauna which serve the fishes as food, and also prevent the fishes and their spawn from thriving, by the fact that the chemical process of putrefaction deprives these animals of the oxygen which is absolutely necessary for their existence."

Not only the fishes, but also the human beings which live in such neighbourhoods, suffer from the stench of the sulphide of hydrogen, which accompanies the putrefaction of *beggiatoja* growth. These fungi derive their nourishment from the large quantities of sulphurous and calcareous organic substances, the nature of which is little known, but which get into the stream with the waste liquor. Much less injurious and easier to eliminate are the sulphites and free sulphurous acid of the waste liquor. The efforts of the aspirants to the prize mentioned must therefore in the first place be directed toward the removal of the organic substances, or at least the task of rendering them harmless.

Numerous patents have been taken out for the production of useful substances from the waste sulphite liquors. The first one, taken out by Dr. A. Mitscherlich, the founder of the German sulphite pulp industry, was taken out in 1875, and refers to the extraction of tannin from the waste liquor. The German patent, No. 34,420, by Ad. Leonhardt on behalf of Prof. Mitscherlich, defines a method of using a tannin solution for the engine-sizing of paper. This solution is well mixed with the pulp in the engine and a solution of gelatine added, which forms with the tannin an insoluble coat of tannin size upon the fibres. The so-called tannin solution was nothing more than undiluted waste sulphite liquor. It is also recommended in this patent to add resin soap, and precipitate the resin and tannin size together. As it was found to be too expensive a process to convey the undiluted waste liquor to the paper mills, Prof. Mitscherlich recommends, in the additional patent No. 54,206, 1890, the precipitation of the tannin matter by a 10 per cent. solution of gelatine, at the sulphite mill. This so-called tannin size is then purified and sent to the paper mills, where it is dissolved by means of alkalies poured into the engines with the pulp, and reprecipitated with alum or acids.

Finding that gelatine was too expensive a material to use for this process, Prof. Mitscherlich took out the German Patent, No. 82,498, for the use of horn or horn-like materials. On steeping in hot water and adding to the waste lye, a precipitate of Keratin-tannin solution is obtained, the properties of which are similar to the tannin size obtained by gelatin. In the additional patent, No.

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86,651, an improved construction of the vessel in which the horn is dissolved is recommended. The waste lye is also treated with alkali before adding the horn solution. The Keratin-tannin is thus kept dissolved, and is not precipitated until the alum or acid is added when in contact with the fibre. Further improvements are made in the patent No. 93,944, where the horn is dissolved in the waste lye. The experiments necessary to obtain these results were made at a manufactory at Hof, in Bavaria, specially erected for the treatment of waste sulphite lye. Paper sized with the tannin size thus obtained was, however, found to have several disadvantages, being not perfectly inkproof, and rather dark in colour. Both these disadvantages can, however, be removed by precipitating the Keratin-tannin size and the resin size together. A little of this tannin size added to the resin size in the engine is said to greatly improve the paper, and to prevent discoloration, even when the water used contains iron. The burnishing which occurs with tannin size alone is entirely due to the presence of iron in the water.

The proportions in which the sizes should be mixed is of great importance, therefore Prof. Mitscherlich decided upon mixing the tannin and resin sizes at his own factory, and selling the product.

The following statements are from a pamphlet by the inventor—"Mitscherlich's Tannin Size: its properties and utility for sizing":—

"Tannin size is a yellowish, viscid liquid, which can be diluted to any strength with hot water. On addition of aluminium sulphate, or acids, a white curdy precipitate is formed, which is insoluble in water. The sizing effect is similar to that of resin size, except that the fibres felt together better, and a larger portion of inferior pulp or loading is held by the paper. The sizing is effected in a similar manner as when resin soap is used. The right quantities of size and alum are obtained by experiment. After the addition of the alum the engine should be emptied at once. About 80 kilogrammes of tannin size is equal to 100 kilogrammes of resin size, and only requires about 20-30 kilogrammes of alum in place of 100-120 kilogrammes."

The following results have been obtained in an English paper mill:—

Resin Size (A).—100 kilogrammes resin to be made into resin size, cost: Resin, 100 kilogrammes at 12s., 12s.; soda, 17 kilogrammes at 11s., 1s. 9d.; alum, 120 kilogrammes at 8s., 9s. 7d.; coal, 1s. 6d.; carriage, etc., 1s. 6d.; wages, 1s.; total, £1 7s. 4d.

Tannin Size (B).—100 kilogrammes tannin size, ready for use, cost: Tannin glue, 14s.; soda, ——; alum, 2s. 9d.; coal, ——; carriage, etc., 1s.; wages, 3d.; total, 18s.

To obtain equal qualities of paper necessitates the use of ¼ less of B than A, therefore the cost of the tannin sizing is only $\frac{1}{4}$, or a little more than half of the resin sizing.

Experiments have also been tried to utilise the waste sulphite liquor for tanning skins. The liquor is submitted to osmosis by placing in porous vessels. Glue, tannin, and other non-crystallisable substances remain in the vessel, whilst some organic matter and gypsum and other salts diffuse through the walls. The concentrated product is used successfully for the above purpose.

By treating the waste liquor with milk of lime, a product is obtained which can be used as a cement for making cakes of fuel. At an Hungarian mill the lye was concentrated by evaporation and charcoal mixed with it, when an excellent fuel was obtained.

Mr. C. D. Ekman has patented a process by which he obtains a substance fit for dressing textile fabrics, by evaporating down and neutralising the waste liquor with salts of the alkalies or alkali earths. The liquor is concentrated to 34 degs. Be, and mixed at a temperature of 85 degs. C with solid magnesium sulphate, when a white scum is formed which is skimmed off. The process is similar to that of the separation of soap by common salt. The scum is dried and ground and sold in barrels. Ekman called this product "Dextron," on account of its being used for the same purpose as dextrine, although its composition is entirely different.

As this dextron contains a tannin-like substance, it is very suitable for dressing fabrics. It possesses antiseptic properties, and secures the fabrics on which it is used from mildew. It has a sulphurous smell of waste lye, and it possesses good pasting properties.

From the mother liquor remaining Messrs. Cross and Bevan succeeded in obtaining a gelatine-like substance, to which they gave the name of "Gelalignosin," which is very similar to Prof. Mitscherlich's tannic glue before mentioned. Water containing a sufficient amount of this gelalignosin solidifies to a jelly when cooled down.

About ten years ago Dr. A. Frank, at Charlottenburg, proposed a treatment in which milk of lime is added to the waste liquor, and the calcium sulphite formed is obtained by washing or by filter presses. Into the liquid which remains air and furnace gases are blown, when the CO_2 converts the excess of lime into calcium carbonate, whilst the oxygen of the air oxidises the aldehyde and other organic matter contained in the liquid. If the liquid is then mixed with the wash water an almost harmless liquor is obtained. This is passed through a pulp-catching system through which all fibres are recovered. If the liquor still contains sufficient organic matter to prevent it being run direct into a river, Dr. A. Frank recommends that it be pumped on to fields, when the soil retains the organic matter as manure, and the water drains off the fields almost clear. This treatment has been well recommended, and has proved very successful at some mills.

As there is a considerable amount of saccharine matter in the lye, Dr. Frank believes that it is possible to obtain a food for animals from it.

L. F. Dorenfeldt, managing director at Rhein-Durckheim, recommends treating the waste lye with soda, evaporating down and burning the residue. The heat obtained from the latter is more than sufficient to

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evaporate an equivalent quantity of lye, and the excess heat could be utilised in the mill.

Waste sulphite liquor is used as a remedy for diseases of the respiratory organs, the fumes from the lye being very beneficial.

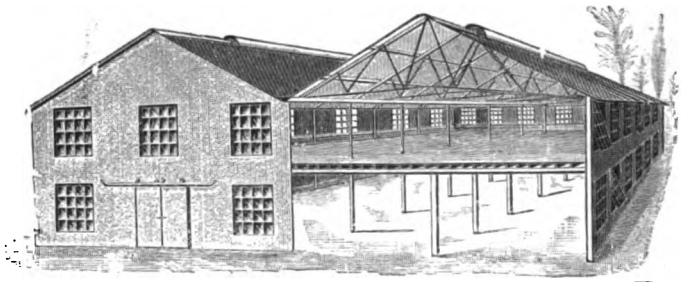
The waste liquor has also been treated with iron or copper salts, a preparation being obtained which renders paper waterproof.

The lecturer concluded by recommending the founding of a government institution where these questions could be experimented upon and beneficial results obtained.

At the discussion following it was pointed out by Mr. R. Dresden that none of the treatments mentioned did away with the waste lye. Those mills which had been forced to evaporate and burn up the waste liquor had been compelled to stop work altogether. If all the mills were to work up their waste lye as tannin glue, dextron, or other side products, the price of these would fall so low as to make the process work at a loss.

It was also stated that the license had been refused by the Wurttemburg Government for the Ekman Dextron treatment as likely to cause fresh pollution of the river, and that Dr. A. Frank's irrigation treatment could not be used, as there was not sufficient ground.

IRON ROOFS AND BUILDINGS,



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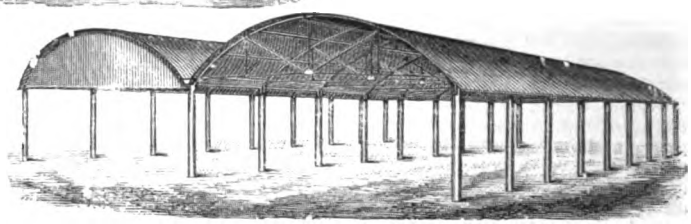

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TRADE NOTES.

RE J. AND R. SHORROCK, LTD., DARWEN (IN LIQUIDATION.—A first dividend of 1s. 4d. in the £ is being distributed in this matter by the liquidator, Mr. H. L. Price, 79, Mosley-street, Manchester.

CHINA CLAY CO., LTD.—At a recent meeting of the members of this company, held at Liberty Hall, Roche, Cornwall, the following extraordinary general resolution was passed:—"That it has been proved to the satsifaction of this meeting that the company cannot, by reason of its liabilities, continue its business, and that it is advisable to wind up the same, and accordingly that the company be wound up voluntarily." Mr. G. M. Henley, engineer, of Roche, was appointed liquidator, and creditors are required to send in particulars of their debts, etc., to him on or before the 25th March.

UNION PAPER MILL, LEEDS.—At the sale of the papermaking plant, machinery, etc., recently held at the Union Paper Mills, Dewsbury-road, Leeds, by Messrs. Edward Rushton, Son, and Kenyon, auctioneers, there was a large attendance of papermakers. Amongst those present we noticed Messrs. Seddon (of East Lancashire), George Hibbert, Hacking (Burnley Paper Co.), and A. E. De Boinville, etc. The prices realised were considered to be fairly good, and amongst the principal purchasers were Messrs. P. Smith, R. Craig and Sons, C. Marsden and Sons, W. Plummer, Wansbrough Paper Co., and T. Griffiths and Co. Amongst other successful biddors were Messrs. J. W. Hinchliffe, the Vegetable Parchment Co., Sewall and Hulton, Steel and Naylor, C. Vaughan, B. Mountain, Olive Bros., Pollitt (Ulverston), J. Johnson, Baker and Sons, S. Priestley, W. Wood, J. B. Watson, H. J. Makin, A. A. Keighley, T. Lee, Archer, J. Stringer, and C. H. Watson.

THE VALUE OF THE "TITAN" SPRINKLER.—A fire occurred on the night of the 19th ult. at the warehouse of Messrs. E. Chalmers and Co., Ltd., paper stock merchants, Bonnington, Leith, N.B., which had every appearance of developing into a serious conflagration. Fortunately, however, the building was fitted up with a complete installation of the "Titan" patent automatic sprinklers, which extinguished the fire. Messrs. George Mills and Co., of Radcliffe, the proprietors of the "Titan" sprinkler, have received the following letter from Messrs. Chalmers:—"We have pleasure in confirming our telegram to you of this date to the effect that a fire took place in our warehouse last night. We are quite convinced that had it not been for the sprinklers, the entire main warehouse and contents would have been destroyed. As it is a prompt alarm was given, and the fire was therefore soon under control. We do not expect the damage will exceed £200 or £250, but had the building with the contents been totally destroyed, the damage would have been more like £10,000. We think it only right to give you this information."

UNITED ALKALI CO., LTD.—The accounts, subject to final audit, show a balance, after paying debenture and preference share interest. For the year, therefore, the result of the working is—the payment of 5 per cent. interest on debentures, and 7 per cent. on preference shares. A balance of £17,000 is carried forward.

THE STATE OF TRADE.—According to the labour correspondent of the Board of Trade, employment in the paper trade remains steady, the percentage of unemployed union members at the end of January being 3·0, compared with 3·2 per cent. in January of last year.

SATINITE.—The Satinite Co., of West Bank, Widnes, report a good demand for Satinite. The article, apparently, is greatly appreciated by papermakers, its use giving a nice finish and feel to the surface of the paper. The Satinite Co. have recently put in additional plant to increase production, and as evidence of the growth in the consumption of Satinite we may state that when operations were first commenced only five tons per week were manufactured, and now the output is nearly 75 tons per week.

THE CHINA CLAY CO., of Manchester, have appointed Mr. George Hamilton, of 74, Wall-street, New York, their agent in the United States.

A DESTRUCTIVE fire broke out last week in a large block of warehouses in the centre of Belfast, occupied by Messrs. M'Gowan and Ingram, wholesale stationers, papermakers, and printers. After the outbreak had been subdued in the front part of the premises, it broke out with still greater fury in the stores at the back, which were completely gutted.

THE SALT UNION.—The report of the Salt Union is not an encouraging one. There is a balance of £25,354, after deducting maintenance, debenture interest, etc. The preference shares receive a dividend at the rate of 1¼ per cent. per annum; the ordinary shares get nothing. It is added in the report, however, that the plant is now in operation for making soap, and that the trial of the electrolytic process for making soda and bleaching powder has been delayed by the engineering strike.

IN the report of the annual dinner of the Stationers' Social Society in our last issue, the name of Mr. W. Robinson, the hon. sec., was mentioned, instead of that of Mr. G. A. Hudson, as one of the founders of the Society.

D. AND R. ENGLAND, LTD.—This company has been registered with a nominal capital of £150,000, in £10 shares, to acquire the business of R. and D. England, worsted, rag, shoddy, etc., manufacturers, at the Britannia Mills, Bingley, Yorkshire.

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CROOKES, ROBERTS & Co.,

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Illustration showing End view of

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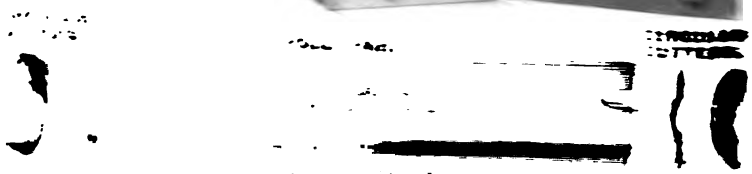
RAG ENGINE ROLL BARS - BED PLATES



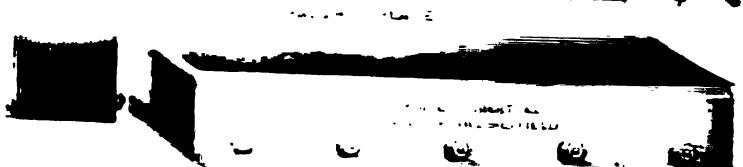


ILLUSTRATION OF TOOLS USED BY PAPERMAKERS.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

THE market for Scandinavian mechanical wood pulps is flat. Sellers find it difficult to get buyers to pay the prices quoted. The latter state there are offers at considerably below current prices.

FRENCH buyers are adopting a waiting policy. The Scandinavians find it necessary, in order to conclude contracts, to make concessions on former prices.

WOOD PULP has been somewhat neglected of late by several British papermakers. They have given more attention to esparto, the low prices of this material proving rather attractive. During the last week or two esparto imports have been rather heavy.

THE members of the Saxon Association of Wood Pulp Makers, judging from the last annual report, are well satisfied with the outlook. During the last two years production has not been increased any material extent, but new papermaking machines have been introduced during that period, and consequently there is now a greater demand for wood pulp.

THE Association urges pulp makers not to be over anxious to sell their whole production, as higher prices may rule later on, particularly if a shortage of water is experienced.

AUSTRIAN wood pulp manufacturers complain of a scarcity of water-power. There has, it is stated, been a reduction in production, and stocks are almost cleared. Higher prices are reported.

DURING the fiscal year ended 30th June, 1897, Canada exported pulp wood to the United States to the value of 677,221 dols., the value for the previous year being 600,225 dols.

CANADIAN wood pulp was exported to the United States during the fiscal year amounting to 576,720 dols., the value in the previous year being 577,085 dols.

SEVERAL new Canadian pulp mills, the largest of them being that at Chicoutimi, are ready to make a heavy addition to the output. Several other projects for pulp mills are well advanced and some of them, at least, will be among the realities before the close of the year.

IT must be remembered that the capacity of the total pulp making industry of Canada was materially enlarged in 1897. The results of this enlargement will only begin to be felt fully this year. More grinders have been put in some of the mills, others have added driers, with a view to exporting their product.

THE Sault Ste. Marie Co. pushed business energetically in the United Kingdom and on the Continent last year, and freely shipped dry pulp.

A DRIER is among the additions to the big plant of the Laurentide Pulp Co. at Grande Mere, in Quebec. This company also aims to be a large exporter of pulp to Great Britain.

THE new pulp mill constructed last summer by the Canada Paper Co. at Windsor Mills, Quebec, is another concern that will have a surplus for export.

CANADIAN manufacturers of sulphite report a satisfactory demand for Great Britain. New Brunswick mills look upon the business as a remunerative one. Ontario manufacturers think of going into the manufacture of sulphite on a large scale.

THE City Council of St. John, N.B., is giving a large amount of time to the applications that have been made to it for sites and privileges for pulp mills.

MR. JOHN MATHER, Rat Portage, Ontario, is negotiating for the erection of a large pulp mill at Keewatin. It is to be one of the biggest mills in the country. Keewatin has a splendid water power, already developed.

THERE is talk of the construction, next spring, of a pulp mill at St. Joseph d'Alma by a company with a capital of a million dollars.

NUMEROUS applications are being made to the Newfoundland government for timber limits on the coast of Labrador. There are splendid spruce forests along the shores and heads of the bays. Some of the applicants purpose making lumber of the timber, much of which is large enough for sawing; others intend to establish pulp factories and to make for the British market. More than a dozen applications are now before the government.

FOLLOWING the example of Harvey and Co., other capitalists are likely to go into the business of manufacturing pulp in Newfoundland. Several enterprises now being hatched are expected to break the shell in the spring, when work may be begun on two or three new factories at least.

IMPORTANT TO WOOD PULP AND OTHER ADVERTISERS.

"'THE WORLD'S PAPER TRADE REVIEW' . . . . widely circulated . . . . both in this country and abroad."—MUNNS AND LONGDEN, solicitors to the BRITISH WOOD PULP ASSOCIATION.

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SCANDINAVIA.

A SWEDISH correspondent writes that extensive developments are about to be made by the Stora Kopparbergs Co., at Kvarnsveden, where three mills will probably be built for the manufacture of mechanical, sulphite and paper.

THE STORA KOPPARBERGS CO. have recently contracted for 18 new American turbines, which are to develop about 12,000 h.p. The sale was made through Mr. H. L. Orrman, in Stockholm, who is the representative for the New American turbine in Scandinavia.

FRANCE.

THE four-hundredth anniversary of the foundation of a paper mill is an event which we are unable to celebrate in England, and it could not, we think, be carried out in many other countries either. Les Papeteries d' Arches (Mm. Perrigot-Masure), in the French department of the Vosges, were however founded in 1498, and the festival of the fourth centenary was held on Sunday, the 23rd ult., when the place was *en fete*. M. Perrigot, the proprietor, invited his workpeople to a banquet, which was graced by the presence of the local prefect, and some other dignataries. No less than 66 of those present had been a quarter of a century in the service of the firm, and 30 had already been decorated with the long service medal. M. Perrigot, also, has just been awarded the Cross of the Legion of Honour. The mill still turns out hand-made paper, 32 vats being in use.

GERMANY.

NORMAL PAPERS.—In order to prevent any great divergence in the quality of normal papers it has been suggested that a strict enforcement should be made by the authorities that no normal papers dare be sold which upon test do not correspond to the class which they represent in the water mark. This is considered necessary for a sound development of the trade and the best protection for the makers of such papers.

THE SAXON ASSOCIATION OF WOOD PULP MAKERS.—The annual report of this Association has recently been issued. It states that owing to the starting up of new papermaking machines stocks of pulp have not accumulated. If there should be any scarcity in the water supply this year a scarcity of pulp is considered likely. At the request of the Imperial Parliament the Association supplied a statistical report on the consumption of pulp and other raw material for papermaking purposes, which will have consideration in the framing of commercial treaties. It may also be stated that circulars have been submitted to the members of the trade by the official authorities asking for replies to certain questions, such as particulars of capital invested, the extent of production, and the profits received, in order that legislation may be based on such lines as to assist in the development of the wood pulp trade. The Baden railway has introduced fresh tariffs, which will shortly come into effect to the benefit of wood pulp manufacturers.

AUSTRIA.

IN consequence of the exceptionally mild winter there is a scarcity of water power and consequently with reduced production stocks of pulp and pulp boards have been cleared, though but a short time ago they were considerable. Makers find a difficulty in keeping up their contracts for forward supply. The prices have already gone up from 50 kroner to 1 fl. the meter cwt., and if the causes of this scarcity are not soon removed a further advance in price is anticipated.

UNITED STATES.

GUNNY BAGGING IMPORTS AND DUTY.—Acting upon information received from the special agents of the Treasury Department, Collector George R. Bidwell has caused a shipment of gunny bagging, imported by Salomon Brothers and Co., to be held for examination, and as a result the appraiser of the port has declared the shipment dutiable under the classification of "bagging for cotton." Solomon Brothers and Co. say the shipment properly belongs under the classification of "old gunny bags fit only to be converted into paper," upon which there is no duty charged. They will appeal to the general appraisers. Some sensational developments are likely.

THE INTERNATIONAL PAPER CO.—The following is a list of the officers, directors, and executive and finance committee of the amalgamated "news" mills in U.S.A.:—President, William A. Russell, of the Russell Paper Co.; first vice-president, Hugh J. Chisholm, of the Otis Falls Pulp Co.; second vice-president, A. N. Burbank, of the Fall Mountain Paper Co.; and treasurer, W. E. Spier, of the Glens Falls Paper Mill Co. The following are the directors:—William A. Russell, of the Russell Paper Co.; Hugh J. Chisholm, of the Otis Falls Pulp Co.; A. N. Burbank, of the Fall Mountain Paper Co.; W. E. Spier, of the Glens Falls Paper Mill Co.; T. S. Coolidge, of the Lake George Paper Co.; D. O. Mills, of the Niagara Falls Paper Co.; A. Pagenstecher, of the Hudson River Pulp and Paper Co.; Roswell P. Flower, of the Piercefield Paper Co.; H. M. Knowles, of the Glen Manufacturing Co.; Warren Curtis, of the Hudson River Pulp

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and Paper Co.; H. G. Burleigh, of the Ticonderoga Paper Co.; Garrett Schenck, of the Rumford Falls Paper Co.; and F. H. Parks, of the Glens Falls Paper Mill Co. Executive committee:—William A. Russell, D. O. Mills, Hugh J. Chisholm, A. Pagenstecher, William E. Spier, H. M. Knowles and A. N. Burbank. Finance committee:—D. O. Mills, William A. Russell, H. J. Chisholm, A. Pagenstecher, A. N. Burbank, and William E. Spier.

AMERICAN STRAW BOARD CO.—Radical changes were made in the management of the American Straw Board Co. at the recent annual meeting, held in Chicago, in the election of the following officers and directors:—President, R. F. Newcomb; vice-president, M. R. Williams: secretary and treasurer, E. M. Watkins. Executive committee:—R. F. Newcomb, chairman; Crawford Fairbanks and L. A. Wiley. Directors:—R. F. Newcomb, W. P. Orr, Crawford Fairbanks, George L. Webb, C. H. Castle, J. A. Spoor, L. A. Wiley, and M. R. Williams.

THE BLAISDELL PAPER PENCIL COMPANY, of Philadelphia, recently brought an action against the Eagle Pencil Company, of New York, alleging infringement of patent on self-sharpening pencils. The plaintiffs, however, failed to make out their case, and the bill was dismissed.

LOWDEN'S COMBINED EXHAUST AND LIVE STEAM REGULATORS are apparently appreciated by Scottish papermakers. One has been in use for some time at the mill of Messrs. Alex. Cowan and Sons, Ltd., Penicuik, and recently two more were shipped to that firm. It is stated that an order has lately been received for five of Lowden's regulators for a paper mill in Scotland.

THE EXPORTS of paper at New York, according to the last weekly list to hand, included the following:—To London, 1,563 packages and 100 bundles; Liverpool, 356 packages; Leith, 50 packages; Manchester, 350 bundles and 470 packages; Bristol, 125 packages; Glasgow, 438 packages, and Southampton, 18 cases. The shipments to Antwerp were 10 packages; Hamburg, 184 packages; Havre, 21 packages; Australasia, 192 packages; British Guiana, 126 packages; Brazil, 62 packages; Africa, 23 packages; British West Indies, 285 packages; Mexico, 119 cases, and New Zealand, 91 packages.

CANADA.

THE DUFFERIN PULP AND PAPER COMPANY, Canada, has been organised with a capital of 3,000,000 dols., by a syndicate composed as follows:—W. and F. P. Currie, proprietors Kingsey Falls Paper Mills; M. S. Foley, proprietor of the *Montreal Journal of Commerce*; J. T. Shearer, lumber merchant; W. G. Reid, contractor; R. Law, merchant, and John Livingstone, manufacturer.

HOCKEY is evidently a favourite pastime in Canada, and a recent match in which considerable interest was shown was that played between teams picked from the office staff of the E. B. Eddy Company, the Invincibles. The teams were:— Upstairs—(Captain) J. F. Taylor, E. C. Jenkins, Alex. Burnett, R. Stewart, M. S. Benson, C. Hynds, C. W. Bertram. Downstairs—(Captain) K. F. Clayton, E. Boucher, T. Kelley, G. Hornidge, J. T. Sheriff, J. Waddell, W. Waddell. Referee—E. Woolsey. Goals: Upstairs, 5; Downstairs, 0. Keen feeling had existed between the two teams since last year, when two matches were played, the first of which ended in a draw of one goal each, and the second game being won by the downstairs men by 2 to 1.

THE LAKE BOUCHETTE PULP COMPANY, Quebec, Que., is applying for incorporation to manufacture pulp, paper, lumber, etc. The capital stock is 200,000 dols. Among those interested are J. I. Lavery, Quebec, and Damase Galbert, Lake Bouchette.

JOHNSEN and JÖRGENSEN,
BOTOLPH HOUSE, EASTCHEAP,
LONDON, E.C.
Sulphite, Soda & Mechanical
WOOD PULPS.
TELEGRAMS: "FISH, LONDON." AGENTS ONLY. TELEPHONE No. 1365.

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THE

United Asbestos Co.,

LIMITED.

DOCK HOUSE, BILLITER STREET, E.C.,

"SALAMANDER" THE UNITED ASBESTOS COMPANY LIMITED · LONDON · INDESTRUCTIBLE TRADE MARK

Pioneers

OF THE

Asbestos

Trade.

UNITED ASBESTOS Co., Limited.

UNITED ASBESTOS PACKINGS.

UNITED ASBESTOS NON-CONDUCTING COVERING

(For Steam Boilers and Pipes)

Best and Cheapest in the Market; Will not injure Boiler Plates.

Asbestos Goods of All Descriptions.

BELTINGS

UNITED ASBESTOS Co. LMTD LONDON. PURE ITALIAN MILLBOARD EXTRA QUALITY A1 INDESTRUCTIBLE

UNITED ASBESTOS A1 MILLBOARDS

(ITALIAN)

Unequalled for Purity, Strength of Fibre, and Uniformity. For Dry Steam Joints it is admitted to be the Cleanest, Most Durable, and Economical Packing in Existence.

UNITED ASBESTOS

Salamander Lubricating Cream and Oils

Specially adapted to Papermaking Machinery.

The UNITED ASBESTOS Patent "SALAMANDER" DECORATIONS,

Novel Application of Asbestos in Embossed Wall Decorations. Designs by Leading Artists. Capable of infinite variety of decorative treatment. Fireproof.

Prices and Particulars on application to West End Depot:
158 & 160, CHARING CROSS ROAD, LONDON, W.C.

Depots—
MANCHESTER: 34, Deansgate; LIVERPOOL: 33, James Street; NEWCASTLE-UPON-TYNE: Quayside; GLASGOW: 93, Bothwell Street; CARDIFF: 135, Bute Street; BRISTOL: Provident Buildings; HULL: Queen's Dock; ANTWERP: Rue Montevideo; ST. PETERSBURG: Gostinoe Dvor (Interior) No. 51.

THE UNITED ASBESTOS

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The World's Paper Trade Review
A Weekly Journal for Paper Makers & Engineers

Established 1879.

Printed and Published EVERY FRIDAY
By W. JOHN STONHILL.
at 58, Shoe Lane, London, E.C.,
Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, FEBRUARY 25, 1898.

The Papermakers' Association.

The annual dinner of this Association will be held this year in London, at the Hotel Cecil, on March 16th. It is to be hoped that there will be a large gathering, and that the trade in the north will be well represented. There are many subjects that need discussion, and one of the most important is that dealing with the growth in the importation of foreign paper. The Association has performed a great deal of useful work during the past year, and we suggest that more publicity be given to their proceedings, in order that papermakers, who are not members, may become interested, and subsequently see the advantage in joining the Association. With such excellent officers, and capable committees—both for the north and the south—we would like to see a special effort made to increase the number of members. Hopes were entertained at the meeting at Manchester last year of the Scottish Association joining the English Association, thus making an Association for the United Kingdon, but we have not heard of the amalgamation being carried through. The formation of a Papermakers' Club has lately been suggested, and the question may well be raised at the next annual meeting whether a club, under the auspices of the Association, would serve to promote the spirit of unity amongst members of the trade, and also create a livelier interest in those matters affecting the well-being of the industry. Of course the old club was not a conspicuous success, and any new departure would have to be on much broader lines.

Foreign Paper in Great Britain.

Although British papermakers are able to show profits that compare favourably with other industries, yet the competition they meet with in the home market at the hands of foreign manufacturers must cause a certain amount of uneasy reflection. It is difficult to know how to grapple with the matter, and we do not think the Papermakers' Association can very well suggest a remedy. Nearly three-and-a-half million pounds sterling were paid by Britishers for foreign paper last year, whilst the exportation of paper from Great Britain reached only a little over one-and-a-half million pounds sterling. It is as well to recognise plain facts, and to effect an improvement if possible. Loud complaints have been made of late owing to the low price of American "news" offered in this country. It is freely used for London newspapers, and even Lancashire men point out that the Manchester *Guardian*, *Courier*, *Mail*, and *Chronicle* get their paper from the States. Will the business be still more energetically developed now the International Paper Co. (N.Y.) has been formed? It is possible that prices will be kept up in the States, and "cut down" for export!

* * *

The American "News" Combine.

The American daily Press severely condemns the amalgamation of the "news" mills. The New York *World* says the company's purpose "is to monopolise the business, raise the price of paper 8 dols. a ton, and levy upon the newspaper and book readers of the land a tax of not less than 4,000,000 dols. a year. There are seventeen mills in the trust, and they purpose to drive all the other mills out of existence. so that they may charge what price they please for the paper on which newspapers are printed. This is a conspiracy to tax knowledge, to levy tribute upon education, to blackmail intelligence itself. Unfortunately the tariff duties aid the conspiracy. They not only prevent Canadian and other foreign competition in the sale of paper, but they exclude Canadian wood pulp. The free admission of wood pulp and paper would go far to crush the conspiracy. What is to be done about the matter? Will any Attorney-General enforce the laws, State or national, against such conspiracies in restraint of trade? Will Congress, seeing clearly that the paper and pulp duties thus aid and abet robbery, repeal those duties? Or is cheap paper to become a thing of the past, and all its benefits to the people in the way of cheap news-

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papers, cheap magazines, and inexpensive books to be lost? These questions closely concern the most vital intellectual interests of the nation."

* * *

Exports of Gunny Bagging to the United States.

A case of considerable interest to European exporters of gunny bagging to the United States is that in which Salomon Bros. and Co. are involved, the matter in dispute being the system of classification. A shipment of 94 bales of old gunny bagging was seized by the Customs Authorities, and upon an examination of several bales the contents revealed large pieces of gunny bagging, the inspectors deciding that the bales properly came under the classification of bagging for rebaling, and as such were dutiable. Salomon Bros. and Co. contend that the goods were imported for papermakers' use, and came under the paragraph making such bagging free of duty. The Tariff Act of 1897 contains the following paragraphs:—

(1) Relating to the free entry of old gunny bagging as paper stock:—"Paper stock, crude, of every description, including all grasses, fibres, rags (other than wool), waste, including jute waste, shavings, clippings, old paper, rope ends, waste rope and waste bagging, including old gunny cloth and old gunny bags, fit only to be converted into paper."

(2) Providing for a duty:—"Bagging for cotton, gunny cloth, and similar fabrics, suitable for covering cotton, composed of single yarns made of jute, jute butts, or hemp, not bleached, dyed, coloured, stained: painted or printed, not exceeding sixteen threads to the square inch, counting the warp and filling, and weighing not less than 15 ounces per square yard, six-tenths of one cent per square yard."

The appraisers have placed the shipment made by Salomon Bros. and Co. under paragraph 2. The firm have appealed, and the decision is awaited with interest. Certain manufacturers of gunny cloth in the United States are understood to have made charges against the paper stock importers, alleging that it has long been a practice with them to import bagging for rebaling under the guise of bagging for papermakers' use, thus escaping the duty.

Stocks and Shares.

There is still a marked absence of business in the paper share market, and changes are not of very great importance. Ramsbottom and Peebles and Sons have paid their dividends and now are quoted ex. East Lancashire continue to be enquired for, and a further rise is noted in the ord. of ¼. Burnley also are much firmer at ½ advance, whilst Kellner-Partington part paid are $\frac{1}{16}$ better. Bergvik debs. are 1 lower, but the deferred are firm at ½ advance. On the other hand, North of Ireland seem depressed, and a further fall of ⅛ is noted. Star ord. are also offered, and are marked $\frac{1}{16}$ down. Waterlow and Sons are ½ lower.

The chief feature of the week in the chemical market has been the rapid fall in F. Steiner pref., which at one time were offered at 10⅞. They have, however, recovered partially, but are still ½ below last week's quotation. The debenture stock is unchanged. Brunner, Mond's are firmer, but with little change. United Alkali issues are fractionally easier, and a fall has taken place in ord. of $\frac{1}{16}$; pref., $\frac{1}{16}$; although both have been much lower. The debs. are, however, ¼ better.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
5	5	Hyde Paper Works Co. (Ld.)	nil	1½—2
10	10	Bath Paper Mill Co. ,,	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—104
10	10	do. do. 6% pref.	6	12—13
3⅛	5	Burnley Paper Co. (Ld.)	10	6—6¼
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref.	6	7⅛—7⅜
2⅝	3	Collin (Darwen) Paper ,,	nil	4/6—5/6
3⅜	5	Darwen Paper Co. ,,	15	7⅞—8¼
10	10	E. Lancashire Paper Co. ,,	nil	6¼—6⅝
10	10	do. do. 6% pref.	nil	6½—7
5	5	do. do. bonus	nil	2½—3
4	5	Hartlepool Pulp & Paper,,	10	7—7⅛ o.d.
2⅜	5	Kelln'r-Part'gt'n P'p Co,,	15	7⅞—8
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7—7⅛ x.d.
7	10	Olive Brothers ,,	10	7⅛—7⅜
5	5	Peebles (A. M.) & Son ,,	8½	7⅜—7½ x.d.
5	5	do. 5% cum. pref.	5	6½—6¾ x.d.
100	Stock	do. 4½% deb. issued 1905	4½	109—111x.d.
3	5	Ramsbottom Paper Co. ,,	12½	6¾—7¼ x.d.
1	1	do. do. cum. pref.	5	1¼—1½ x.d.
4½	5	Roach Bridge Paper Co. ,,	10	5—5⅛
5	5	Star Paper Co.	10	7 1/16—7 1/16
3	5	do. do. cum. pref.	10	6—6¼
1	1	Thomas Owen & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2—2¼
10	10	Waterlow & Sons non.-cum. def.	12	15⅛—15⅜
		do. do. non.-cum. pref.		14¾—15¼
10	10	do. do. cum. pref.	3½	10⅝—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	8¼—8½
10	10	do. do. cum. pref.	7	11¼—11½
100	100	do. do. debs. (red. 1904)	6	104—106
10	10	Brunner, Mond & Co. (Ld.)	20	42½—43
3½	10	do. do. "New" ,,	20	17—17½
10	10	do. do. 7% pref. ,,	7	18¼—18½
5	10	do. do. do. new issue	7	8¼—8⅜
1	1	Castner-Kellner Co. ,,	—	22/6—23/6
5	5	Clayton Aniline cum. pref.	6	5⅝—6⅛
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11—11¼
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	2—2 1/16
10	10	do. do. cum. pref.,,	7	9¼—9¾
100	Stock	do. mort. deb. (red. after 1901)	5	111½—112

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SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries.

OFFICES—58, SHOE LANE, LONDON, E.C.

Situations Vacant.

PAPERMAKER Wanted.—An Experienced Man for the manufacture of high-class Writings; must be up-to-date in every particular.—Address (in confidence), No. 7,222, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7222

TRAVELLER Wanted by a firm of paper agents. Must be well up in foreign papers, and have a good connection amongst wholesale trade.—Address, No. 7,196, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7196

TO BOARD MAKERS.—Wanted, a Machine-man for making leather boards from strong materials.—Address, stating wages required, No. 7,207, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7207

Situations Wanted.

ADVERTISER (28), with about 10 years' experience in makers' and agents' London offices, seeks agency, or London engagement where industry, conscientiousness, and business aptitude, would meet with a reasonable reward.—Address, No. 7,181, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7181

FOREMAN MILLWRIGHT wants situation in a paper mill or bleach works; 20 years' experience; can give good reference.—Address, No. 7,210, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7210

SITUATION Wanted as Manager or Traveller in wholesale paper business; thoroughly acquainted with the trade and Norwegian paper mills; 15 years' experience, 9 years as manager of a Norwegian mill. Speak and correspond in Scandinavian, German, English, also acquainted with French and Spanish. For the last 7 years been travelling exclusively in England.—Address, K., 42, Claremont-square, N. 7221

MANAGER.—An Experienced Manager will shortly be open to a Re-engagement. Thoroughly practical and accustomed to entire control. Twenty years' experience in the manufacture of papers from esparto, rags, and wood pulp. Age 44. Active and energetic. Highest references to present and past employers.—Address, No. 7,142, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7142

Machinery.

FOURDRINIER Papermaking Machine, must be strong, modern, and in good order; 80 to 106 inches of paper. Fair price for a good machine.—Address, K., No. 7,202, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C.

WANTED, Calender for Friction Glazing papers.—Address, with particulars, to No. 7,220, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7220

WANTED, Two Second-hand Kollergangs; running stones 6ft. diameter and 18 in. on face.—State price and full particulars to No. 7,219, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe Lane, London, E.C. 7219

Miscellaneous.

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

PAPER MILL FOR SALE.—Brown Paper Mill in Scotland, 64 inch machine, steam and water power.—Particulars on application to No. 94, Keith & Co., Advertising Agents, Edinburgh. 7214

TO PAPER MANUFACTURERS AND CELLULOSE MAKERS.

A YOUNG GENTLEMAN, of good Swedish family, practical, experienced

SODA-CELLULOSE & SULPHITE BOILER

wants, in order to acquire some lingual and technical experience in the branch,

A BERTH AS VOLUNTEER,

Second-Foreman or Boiler, in the United Kingdom.

Applicant would like especially to find board and lodging with a good family at a reasonable expense.

Salary is not asked for to start with.

Please address— 3114

"J.N." 5685 c/o Rudolf Mosse, Berlin, S.W.

What Is It You Want To Know?

THE COMMERCIAL INTELLIGENCE DEPARTMENT of the ASSOCIATED TRADE and INDUSTRIAL PRESS, WASHINGTON, D.C., U.S.A., nine years established, is prepared to supply business firms and manufacturers throughout the world with Commercial Intelligence and General Information.

No matter what it is you are in a quandary about, no matter in what country, the information is to be obtained, our facilities are such that we can insure satisfactory results at amazingly moderate costs.

Our Agents and Representatives are in every Country, and the class of inquiries embrace Credit Reports, Lists of Dealers, Manufacturers, and Exporters in various lines, Customs Duties, Hotel Charges, Transportation Routes, and such questions as are likely to come up in any modern business house or counting-room.

All inquiries must be accompanied by one dollar in express or postal money order, which is ordinarily sufficient. If larger fees are necessary the inquirer will be communicated with.

As to our Reliability and General Standing we refer you to any prominent official of the United States Government.

All Wholesale Firms and Manufacturers who read this are invited to send us their catalogues and Price Lists to be filed for reference in our main office at Washington

CUT THIS OUT. 2965

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SALES BY AUCTION.

Re THE WEST LONDON PAPER MILL CO., LTD.

By Order of the Liquidator, Arthur B. Russell, Esq., Chartered Accountant.

Messrs. Fuller, Horsey, Sons & Cassell

Will Offer for

SALE BY AUCTION,

IN ONE LOT, ON THE PREMISES, ON

TUESDAY, MARCH 8th,

At 11 o'clock Precisely, the Valuable Leasehold Property known as

THE WEST LONDON PAPER MILLS,

Lots-road, Chelsea, having a Frontage to the West Kensington Canal of 119 feet, a frontage to Lots-road of 100 feet, and occupying a Ground Area of about 1,920 square yards. In the first instance the Plant and Machinery (both fixed and loose) will be included in the purchase, but, if not then sold, the Lease will be offered separately, and immediately afterwards the Machinery in lots in detail, as per separate Catalogue.

Particulars and Orders to View may be had of the Liquidator, Arthur B. Russell, Esq., 11, Ludgate-hill, E.C., of Messrs. Swann and Co., Solicitors, 38, Chancery-lane, W.C., and of the Auctioneers, 11, Billiter-square, E.C.

To PAPERMAKERS, ENGINEERS, & OTHERS.

Messrs. Fuller, Horsey, Sons & Cassell

Will (unless previously disposed of as a whole)

SELL IN LOTS

at the WEST LONDON PAPER MILL, LOTS ROAD, CHELSEA, on

TUESDAY, MARCH 8th,

At 11 o'clock Precisely,

PAPERMAKING PLANT & MACHINERY

Including an 80-inch Papermaking Machine, with 9 Drying cylinders and Glazing Rolls, Slitting and Cutting Machine, 7 Washing and Beating Engines, Stuff and Vacuum Pumps, Stuff Chests, numerous Tanks, horizontal Machine Engine, 2 Revolving Rag Boilers, Rag Chopper, Dusting Machines, Conveyors and Elevators, Kollergang, 2 60-inch Fans, Centrifugal Pulsometer, Worthington and other Pumps, Compound Condensing Tandem Engine, vertical high-speed ditto, 4 (120-lbs. w.p.) Multitubular Boilers, a 6-ton Weighbridge, quantity of Papermaking Material, and numerous other Effects.

May be Viewed by orders, and Catalogues had as in preceding advertisement.

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	524	470	45
AFRICA	311	63	25
ARGENTINE	—	117	6
BELGIUM	225	14	33
B. GUIANA	34	31	3
CAPE COLONY	—	105	113
CANADA	—	—	9
CHINA	1113	20	128
CHANNEL ISLES	—	—	31
DENMARK	—	—	68
EGYPT	170	—	3
FRANCE	231	39	5
GERMANY	—	15	13
HOLLAND	13	—	138
INDIA	381	349	109
JAPAN	—	9	—
MALTA	—	21	1
MAURITIUS	31	—	—
NORWAY	—	—	1
NEW ZEALAND	436	214	338
PORTUGAL	—	5	22
SPAIN	—	10	50
SWEDEN	—	—	73
S. SETTLEMENTS	11	31	1
W. INDIES	78	63	—

FROM GLASGOW.

AUSTRALASIA	858	51	—
CAPE COLONY	21	—	60
CHINA	31	—	—
CANADA	—	—	18
INDIA	218	184	167
U.S.A.	—	—	23
W. INDIES	—	1	—

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	139	—	—
BELGIUM	1932	1	8
DENMARK	151	—	—
FRANCE	791	40	—
FINLAND	531	—	—
GERMANY	1348	33	11
HOLLAND	14329	56	—
JAPAN	—	87	—
NORWAY	1024	—	—
SPAIN	—	15	—
SWEDEN	5315	—	489
U.S.A.	2040	233	285

Including the Following:—

Quantity	From	Importer	Port
6 bales	Boston	Cooper, Dennison & Co	London
50 ,,	,,	Spicer Bros.	,,
36 ,,	,,	Hazel, Watson & Co	,,
9 ,,	Copenhagen	R. Ulrich	,,
10 ,,	,,	Cripps & Co	,,
16 ,,	,,	J. Spicer & Sons	,,
33 ,,	Christiania	Alsing & Co	Grangemouth
19 ,,	Danzig	Elkan & Co	London
57 ,,	Fiume	Spicer & Son	,,
85 ,,	,,	Morgan & Co	,,
92 ,,	,,	Brown & Brough	,,
12 ,,	,,	E. E. Sabel	,,
678 ,,	Gothenburg	J. Eberstein	,,
18 ,,	,,	G. Smythe	,,
291 ,,	,,	Schenkenwald	,,
18 ,,	,,	Skarblacka	,,
53 ,,	,,	J. Spicer & Sons	,,
29 ,,	,,	Becker & Wagner	,,
19 ,,	,,	E. E. Sabel	,,
5 ,,	,,	Clayden & Co	,,
7 ,,	,,	Brown & Co	,,
18 ,,	,,	J. Hamilton	,,
782 ,,	,,	R. L. Lundgren	,,
1 ,,	,,	Cookson & Co	,,
4 ,,	,,	Huber & Co	,,
41 ,,	New York	Christophersen & Co	,,
46 ,,	,,	Christie & Co	,,
56 ,,	,,	Spalding & Hodge	,,
215 ,,	,,	Grosvenor, Chater	,,
52 ,,	,,	Morgan & Co	,,
1 ,,	,,	New Supply Co	,,
4 ,,	,,	Wyckoff & Co	,,
535 ,,	Uddevalla	D. Gulland	,,

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WORLD'S PAPER TRADE REVIEW'
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester, Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams.

Telegrams—"STONHILL, LONDON."

CHEMICALS.—There is a better tone in the chemical market, owing, perhaps to an increased demand. CAUSTIC SODA is in good request, 77 per cent. standing at £8 12s. 6d. and 70 per cent. £7 to £7 2s. 6d., whilst CAUSTIC BOTTOMS are quoted £4 12s. 6d. BLEACHING POWDER is depressed, soft wood being unaltered at £5 2s. 6d. to £5 5s. and hard wood £6 to £6 5s. f.o.b. Liverpool. ALKALI is steady, Ammonia 58 per cent. being quoted £4 to £4 2s. 6d. makers' works, Carbonated 58 per cent. £4 10s., and Caustic 57-58 per cent. £4 15s. SODA CRYSTALS are unaltered at £2 17s. 6d. bags on rails. RECOVERED SULPHUR stands at £4 10s. to £5; SULPHATE OF ALUMINA, £4 5s. to £4 10s. ex warehouse Manchester; and ALUM, loose lump, £4 17s 6d. to £5.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½ %	5	5 0
,, ,, barrels	...	,, ,,	2½ %	5	15 0
,, ,, tierces	...	,, Hull	2½ %	5	2 6
,, ,, ,,	...	Goole	2½ %	5	2 6
,, ,,	...	f.o.b. Glasgow	2½ %	5	2 6
Alum Lump) ,,	...	f.o.b. Liverpool	2½ %	4	12 6
,, ,, barrels	...	,, ,,	2½ %	4	15 0
,, ,, tierces	...	,, Hull	2½ %	4	12 6
,, ,, ,,	...	Goole	2½ %	4	12 6
,, ,, ,,	...	London	2½ %	5	2 6
,, ,, ,,	...	f.a.s. Glasgow	2½ %	4	17 6
Alumina Sulphate	...	f.o.b. Tyne	net	3	11 3
Aluminoferric Cake, slabs		Liverpool ...	...	2	15 0
,, ,, tierces		,, ...	...	3	2 6
Alumina Cake, ... slabs		Glasgow ...	...	2	10 0
Blanc Fixe	...	f.o.b. Tyne	net	6	17 6
Bleach, ...	...	,, ,,	net	6	0 0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5 0
,, (hard wood)	...	f.o.b. Liverpool	net	6	0 0
,, (soft wood)	...	landed London	net	6	0 0
Borax (crystals) ...	...	... ...	net	14	10 0
,, powdered ...	...	... .	net	15	0 0
Chloride of Barium	...	f.o.b. Tyne	net	6	15 0
Caustic White 76%	...	f.o.b. Liverpool	net	8	15 0
,, 74%	...	,, ,,	net	8	10 0
,, 70%	...	,, ,,	net	7	5 0
,, 70%	...	f.o.r. Lancs.,	net	7	2 6
,, 60%	...	f.o.b. Liverpool	net	6	10 0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5	15 0
,, 60%	...	f.o.b. Liverpool	net	5	17 6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4	12 6
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4	12 6
,, ,, 48%		,,	net	4	7 6
,, ,, 58%		f.o.r. Widnes	net	4	10 0
,, ,, 48%		,, ,,	net	4	5 0
,, Ammonia 58%		f.o.b. Liverpool		4	5 0
,, ,, 48%		,,		4	0 9
,, Caustic 48%		,,		4	12 9
,, ,, 57-58%		,,		4	17 0
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5	0 0
,, 10-ton lots		ex ship Liverp'l	net	5	5 0
Oxalic Acid	...	f.o.b. Liverpool	3½ %	per lb	0
Salt Cake	...	on rail, in bulk		1	2 0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35	0 0
,, (2nds)	...	,,		33	0 0
Soda Crystals		f.o.b. Tyne	net	2	15 0
,, ,, ...		ex ship Thames	2½ %	2	15 0
,, ,, ...		f.o.b. Liverpool	5%	2	17 3
Sulphur, roll		f.a.s. works	2½ %	6	5 0
,, flowers		,, ,,	2½ %	7	5 0
,, recovered ...		,, ,,	2½ %	5	0 0
Sulphate of Ammonia ,,		,, ,,	2½ %	10	0 0
,, of Copper ...		,, Liverpool	5%	16	10 0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	5	0	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15	0
Blanc Fixe (c.i.f., London)		7	0	0
White Sugar of Lead		24	0	0
Zinc Oxide		18	5	0
Bleaching Powder		5	15	0

ESPARTO.—The market for Spanish remains high and firm, with very little offering—the quotations of new crop being very difficult to get so early in the year. African sales have made further progress at somewhat steadier prices.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—	Fair to Good	£4	10	0	to 4	17	6
,,	Fine to Best	5	5	0	,, 5	10	0
Oran—	Fair to Good	2	17	6	,, 3	0	0
,,	First Quality	3	1	3	,, 3	2	3
Tripoli—	Hand-picked	2	18	9	,, 3	1	3
,,	Fair Average	2	15	0	,, 2	16	6
Bona & Philippeville	... ...	3	3	9	,, 3	6	6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
1061 tons	Alicante	Morris and Co	Granton
1115 ,,	Aguilas	H. Ottomann	,,
1028 ,,	Arzew	R. H. Hay and Co	,,
3270 bales	Bona		Leith
975 tons	Oran	C. J. Turcan	Granton
3328 bales	,,		Fleetwood
570 tons	,,		,,
590 ,,	,,	Morris and Co.	Glasgow
2236 bales	,,		London
400 tons	Philippeville		,,
8024 bales	Tripoli		,,

CHEMICAL WOOD PULPS.—Prices for SULPHITE are fairly well maintained, though business is not on a very extensive scale. SODA pulps are steady.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common		£8	12	6	to 9	0	0
,, Superior ,, ...		9	5	0	,, 9	10	0
,, Bleached, ...		11	10	0	,, 15	0	0
SODA, Unbleached, Common ...		8	5	0	,, 8	10	0
,, Extra...		8	15	0	,, 9	5	0
,, Bleached		10	10	0	,, 12	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.	to 25.
,, Bleached	31.	,, 36
SODA, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.
SULPHATE, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached	$1.62 to 2
,, SODA Bleached	1.70 2
FOREIGN SODA, Unbleached ...	2.15 2.10
,, Bleached	2.70 2·80c.
,, SULPHITE, Unbleached	2·30 ,, 2·75c.
,, ,, Bleached...	3.25 ,, 3·30c.

MECHANICAL WOOD PULPS.—The market in Scandinavia is reported to be quiet, and offers are upon the market at lower prices than those quoted by Norwegian and Swedish makers. American and Canadian pulps are still coming forward in fairly large quantities.

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BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows :

Aspen,	Dry	...	...	...	...	...	...	£6	10	0	
Pine,	Dry	...	...	...	...	£4	5	0 to	4	12	6
,,	Moist	...	...	...	...	2	2	6 ,,	2	7	6
Brown,	Dry	...	...	...	...	...	...	4	15	0	
,,	Moist	...	...	...	...	...	...	2	10	0	

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt

Pine Pulp, 50% moisture, ordinary ...			Frs. 11.	to	12.
,,	,,	fine ...	12.50	,,	13.
,,	dry, ordinary ...	...	11.50	,,	11.75
,,	,, fine	...	11.75	,,	13.
Aspen,	,, ,,	...	16.	,,	17.50
Half-Chemical Brown, 50% moisture			10.50	,,	11.
,,	,, dry	...	12 50	,,	13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
106 bales	Ghent		London
2290 ,,	Skein	Becker & Co	,,
435 ,,	,,	E. Lloyd Ltd	,,
620 ,,	Risor	Becker and Co	,,
7730 ,,	Drammen	E. Lloyd	,,
430 ,,	,,	Becker and Co	,,
24 cases	Philadelphia		,,
412 bales	Rotterdam		,,
176 ,,	Copenhagen	Johnsen and Jorgensen	,,
36 ,,	Gothenburg	Spicer Bros	,,
64 ,,	,,	R. L. Lundgren	,,
6 ,,	,,		,,
103 ,,	Ghent		,,
2660 rolls	Boston		Liverpool
2376 bales	St. John's		,,
1880 ,,	Drontheim		Hull
1810 ,,	Christiania		,,
73 ,,	Bergen		,,
533 ,,	Hango		,,
98 ,,	Boston		,,
6210 ,,	Gothenburg		Manchester
211 ,,	Rotterdam		,,
1662 ,,	Sarpsborg		,,
104 ,,	Rotterdam		Goole
1475 ,,	Gothenburg		Granton
1196 ,,	St. John's		Glasgow
1238 ,,	Christiania	Alsing and Co	Grangmth
490 ,,	Christiansand		,,
40 ,,	Rotterdam		Leith

Totals of Wood Pulp from Each Country:

BELGIUM ...	100 bales	NORWAY ...	16786 bales
,, ...	106 brls.	SWEDEN ...	9453 ,,
CANADA ...	3502 bales	U.S.A.	98 ,,
DENMARK ...	176 ,,	,, ...	24 cases
FINLAND ...	533 ,,	,, ...	2660 rolls
HOLLAND ...	767 ,,		

STRAW.—Prices :

Oat Straw,	...	c.i.f. London	42/0 ;	f.o.r. Goole,	42/0
Wheat ,,	...	do.	44/0 ;	do.	40/0
Rye ,,	...	do.	57/6 ;	de	57/6

STRAW PULPS.—Market firm. During the week 51 bales of straw pulp were received at London from Hambro.

Prices, c.i.f. London, Hull or Leith

German, dry, No. 1	...	...	...	...	£14	0	0
,, No. 2	...	...	...	...	£13	0	0

WASTE PAPERS.—Prices :

Cream Shavings	...	10/0	Small Letters	...	3/0
Fine ,,	...	8/0	Large ,,	...	...	4/0
Mixed ,,	...	2/6	Brown Paper	...	...	2/3
White Printings	...	7/0	Light Browns	...	...	3/0
White Waste	...	1/9	Dark ,,	...	...	2/0
Wood Pulp Cuttings		3/0	Books & Pamphlets	...		3/6
Blue Paper	... ...	2/0	Strawboard Cuttings			1/3
Crushed News	... ...	2/0	Jacquards	... ...		2/0

For Export : 2s/- per ton extra.

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

JUTE.—Market dull, and prices easier.

Good Wht	£15 0 to £16 10	Common ...	£7 10 to	£9	0
Good	£13 0 to £14 10	Rejections ...	£6 10 to	£8	10
Medium	£10 0 to £12 10	Cuttings ...	£3 0 to	£4	0

FOREIGN RAGS. — The imports of rags from France are fairly large. Belgium shippers have also experienced more demand of late, but German and Dutch paper stock merchants report business flat. The imports at British ports for the week were as under :—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
191	Ghent	Hull	223	Hambro	Goole
54	Amsterdam	,,	232	Boulogne	,,
24	Stettin	,,	70	Hambro	Grimsby
229	Copenhagen	,,	57	Rotterdam	,,
108	Dunkirk	,,	171	Bremen	,,
204	Rouen	,,	68	Antwerp	,,
55	Rotterdam	,,	336	Dieppe	,,
25	Amsterdam	London	63	St. Malo	Sthampton
62	Alexandria	,,	25	Bremen	Leith
120	Calais	,,	18	Rotterdam	,,
4	Hambro	,,	30	Hambro	,,
321	Rouen	,,	22	Calais	,,
127	Sydney	,,	68	Bordeaux	Liverpool
287	Ghent	,,	165	Alexandra	,,
26	Dunkirk	,,	15	Amsterdam	,,
151	Treport	,,	18	Antwerp	Bristol
24	Rotterdam	,,	132	Rotterdam	,,
54	Ghent	Goole	26	Amsterdam	,,
50	Rotterdam	,,	188	St. Nazaire	Newhvn
244	Antwerp	,,	6	Amsterdam	Grgmth
29	Calais	,,			

Totals from Each Country:

AUSTRIA ...	127 bales	FRANCE ...	1868 bales
BELGIUM ...	862 ,,	GERMANY ...	548 ,,
DENMARK ...	229 ,,	HOLLAND ...	466 ,,
EGYPT	227 ,,		

DUTCH RAGS.

.o.r. Hull or Goole ; 2/6 per ton extra London and Leith 7/6 Liverpool ; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope(coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope coils)	8/0	Not ree from wood	5/0

GERMAN RAGS.

HAMBURG : F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	12/0
SPF	11/0	CFB	8/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No 1 6/-: No. 11	5/0

STETTIN : C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	8/0
SPF	11/0	CSPFFF	14/0
FF	8/0	CSPFF	10/0
FG	8/6	CFB (Blue)	6/0
FFX	7/0	CFX (Coloured) ...	4/0

BELGIAN RAGS.

F.o.b. Ghent. Freights : London, 8/0 ; Hull and Goole, 12/6 Liverpool and Leith, 10/0 ; Newcastle, 12/6 ; Dundee and Aberdeen, 15/0 ; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linens	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cuttings	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0 ; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0 ; No. 2 ... ... 3/0

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FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Bl e Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ..	3/6	,, Stay ..	15/0

PRUSSIAN RAGS.

O.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF	12/6	Jute I	3/0
FG	10/0	,, II...	2/0
LFB	8/0	Rope I...	8/6
FF	5/6	,, II ...	6/0

NORWEGIAN RAGS.

O.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	2nd Canvas ...	7/0
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/0

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* ,, at Smyrna and Salonica.

HOME RAGS.— LONDON: There is a good demand for most grades, and prices have a hardening tendency. New White Cuttings are selling well, and Gunny is also in better demand. — BRISTOL: Trade keeps fair. — MANCHESTER: Steady demand; prices unchanged.—EDINBURGH and GLASGOW: The market for some grades is decidedly firmer, and higher prices are obtained. The prospects are very good.— DUBLIN: Business quiet; demand limited.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/0
Fines (selected)...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected) ...	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	2/3-2/9
Country do. ...	2/0	Gunny	2/0-2/3

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	2/6-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/6
Outshots	12/0	W. Manilla Rope ...	7/0
Mixed Fines...	14/0	Tarred Manilla Rope	8/9
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Canvas (best)	15/0	Bagging...	2/3
2nd	8/	,, (clean)...	3/0-4/0

GLASGOW.

Fines	12/6-16/0	Canva No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues	3/3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	9/0

DUBLIN.

White Cuttings ...	16/0	Mill Bagging	c
Fines	9/0	White Manilla ...	8
Seconds	3/6	Tarred Hemp	6/
Light Prints	2/6	Rigging	10/
Black do.	1/6	Mixed Ropes ...	

STARCH. — Prices are firm, and Farina shows an advance.

F.o.r. London, less 2½%

Maize—Crisp, £9 15/-; Pearl, £6 5/-; Powder, £6 15/- Special £14.

Farina—Prime, £11 10/-; B.K.M.F., £13 10/-.

Delivered, less 5½%:

Rice—Special (in chests), £20 0/-; Crystal (in bags) £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£15

SIZING.—Market very firm.

English Gelatines per cwt.	90/0	to	120/0
Foreign ,, ...	70/0	,,	100/0
Fine Scotch Glues	45/0	,,	60/0
Long Scotch Glues	35/0	,,	40/0
Common Black ,, ...	25/0	,,	28/0
"Town" Glues	38/0	,,	45/0
"Pone" Glues	26/0	,,	30/0
Foreign Glues	28/0	,,	35/0
Bone Size	5/6	,,	10/0
Gelatine Size	6/6	,,	10/0
Dry B.A. Pieces	50/0	,,	55/0
,, English Pieces	35/0	,,	45/0
Wet ,, ,, ...	8/6	,,	9/0
,, Sheep Pieces	3/0	,,	4/0
Buffalo Hide Shavings	32/0	,,	40/0
,, Picker Waste	32/0	,,	35/

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4/9	5/-	5/3	5/4½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS.—Trade steady.

Mineral Black ...	cwt.	3/6	PASTE COLOURS with
do. superior ...	,,	4/0	60% of colour, as follows:
Pure Ivory Black	,,	12/0	Orange Pulp ... cwt. 40/0
Ochre	,,	2/3	Golden Yellow Pulp 30/0
French J. C. Ochre	ton	60/0	Lemon ,, ,, cwt. 30/0
Chrome (pure) ...	cwt.	40/0	Prussian Yellow ,, 36/0
Red Oxide	,,	4/6	Green (free of arsenic 26/0
Umber, Devonshire	,,	50/0	Paste Blue, 20% ... 18/0
do. Turkish ...	,,	40/0	,, 33%; 26/0; 45% 45/0
Lamp Black ...	,,	5/0-7/6	Imperial Yellow (dry) 16/0
Ultramarine (pure)		35/0-45/0	(less 2½% d/d)
Cochineal	lb.	4½-2/0	

METALS.—LONDON: COPPER firm with an advance in price; TIN easier; LEAD steady. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	49	15	0	—50	0	0
,, three months	50	0	0	—50	5	0
Tough	51	17	6	—52	7	6
Best selected	52	12	6	—53	7	6
Strong Sheets	60	0	0	—		
TIN—						
Fine foreign, cash	64	0	0	—64	10	0
,, three months	64	11	3	—65	1	3
LEAD—						
Spanish...				12	3	9
English...	12	11	3	—12	12	6

MINERALS.—The demand for CHINA CLAY is rather quiet. A moderate business is passing in FRENCH CHALK and MINERAL WHITE, and there is a good enquiry for SNOWDRIFT and SATINITE.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine... ...	28/0	less 2½%;	del. Lancashire...		38/0
Pottery Super.	24/0	,,	,, ...		34/0
Ball Seconds ...	20/0	,,	,, ...		30/
Seconds	15/0	,,	,, ...		25/0
Thirds	11/0	,,	,, ...		21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/0 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 60/0, 66/0, 73/6, and 77/6 per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool, I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 12/6 per ton of 10 bags.

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Superfine Hardening, f.o.r. works, 40/- to 42/-.
Patent Hardening (2 ton lots) f.o.r. Lancs., £35/0.
Snowdrift (Paper Toughener), in ton lots, 12/- per cwt
Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.
Magnesite (in lump) 39/6 to 46/0 per ton.
Albarine, £3 del. mills.
Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.
Asbestos, brown grades, £14 to £14 12/6.
Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.
Bauxite, minimum alumina, 60%, 15/9 f.o.b.
Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.
Satinite, £3 to £3 6s. od., in casks, f.o.b Liverpool or Manchester.
Whiting, f.o.b., 10/6 to 12/6 per ton.
Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.
Hydrate of Alumina, £12 10/0.

LIME.—The present price is 10/6 per ton f.o.r

BALING TWINE.—Prices:

	Thick.	Medium.	Fine
Hemp ...	4d. per lb.	4½d. per lb	5d. per
Mixed ...	3½d. ..	4d. ,,	4½d. ,

NEW PATENTS.

SPECIFICATIONS PUBLISHED.

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1897.

1,790.—Paper pulp refining engines. Pearson and Bertram.
2,736.—Method of improving the colour of raw jute fibre. Shearer.
2,960.—Process for improving the colour of raw jute fibre. O'Brien and Shearer.

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

13218 b	Emden	London	1848 b	Rotterdam	Manchstr

MILLBOARDS.

4400 b	Delfzyl	Goole	7674 b	Harlingen	Hull
43 ,	,,	,,			

WOOD PULP BOARDS.

588 b	Gothenburg	Hull	112 b	New York	Bristol
36 ,,	,,	Granton	8 ,,	Christiania	Grngnth

PASTEBOARDS.

3203 b	New York	London	636 b	New York	Liverpool
162 ,,	,,	,,	640 ,,	Antwerp	Manchester
20 ,,	Malmo	Grimsby	147 ,,	Hango	Hull
1 c	Rotterdam	Grngnth	2834 ,,	Harlingen	Leith

b—bales. c—cases. r—rolls. cr—crates.

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Not Importers of Foreign Paper.

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—We call your attention to the fact that on the 11th February our name appears as importers of 32 bales of paper from Christiania.

We should feel obliged if you would kindly alter this, as it is not in accordance with fact. We have on previous occasions pointed out that we never have and never will import foreign paper.

Yours truly,
64, Cannon-street, E.C. BECKER & Co.
Feb. 19, 1898.

The Driving of Papermaking Machines.

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—On account of your article "The Driving of Papermaking Machines," in the issue No. 5, Vol. XXIX, of your valued periodical, concerning the patent that had been granted to Mr. T. Milne, of Edinburgh, for the method of driving papermaking machines with only one belt or rope, I respectfully beg to inform you that I have used a similar method since several years back on papermaking machines that I have built and rebuilt at the Munksjo Paper Mill, in Jönköping.

Yours truly,
Thimsfors Aktiebolag. A. MUNTZING.
Feb. 16, 1898.

BERGVIK Co., Ltd.

The report for the year ended Oct. 31st of the Bergvik Co., Ltd., states that the trading and profit and loss account of the Swedish company, after charging the expenditure on necessary repairs, insurance, and depreciation, writing off £11,321 from the cost of buildings and works, providing for the interest and redemption of the Swedish debentures December 1st, 1897, and placing £10,000 to reserve, but including £4,050 brought forward, shows a net profit of £55,331, out of which a dividend has been declared of £50,000, leaving £5,331 to be carried forward. The reserve fund in the Swedish company's accounts with the above appropriation now amounts to £30,000. The 4½ per cent. debentures outstanding in Sweden, deducting £3,611, the amount redeemed on December 1st, have been reduced to £33,333. Taking credit for the above-declared dividend of £50,000 from the Swedish company, the profit and loss account of this company, after writing off the debit balance of £7,600 standing to the debenture bonus redemption account, and providing for the London charges and interest and sinking fund on the debentures, shows a net profit of £20,791. Adding to this amount £340 brought forward and deducting the interim dividend of £7,500 paid on the preferred shares, an available balance of £13,830 is left. The directors recommend the payment of a dividend of 12s. per share, being 6 per cent. for the year on the deferred shares, and that £330 be carried forward.

THE BRITISH COLUMBIA PULP AND PAPER MILLS, LTD.

A COMPANY RECENTLY REGISTERED IN SCOTLAND.

This company has been registered with a nominal capital of £50,000 in £1 shares (5,000 of which shall receive no dividend for five years from date of registration until 5 per cent. has been paid on the ordinary shares). The signatories are :—

W. S. Workman, shipowner, Glasgow.
George Smith, junr., shipowner, Glasgow.
R. A. Workman, clerk, Glasgow.
John Boyd, ironfounder, Glasgow.
Robert D. Findlay, stockbroker, Glasgow.
R. Clement Boyd, Glasgow.
R. C. Mackay, Glasgow.

Object, to enter into an agreement with Mrs. Josephine Munce or Carmichael, wife of Herbert Carmichael, chief assayer and analyst to the Provincial Government of British Columbia, and residing at Victoria, British Columbia, and to carry on the business of manufacturers of paper, wood pulp, wood meal, and similar products.

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FORSHAGA, SWEDEN.
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LE GRAND & SUTCLIFF,
Hydraulic Engineers,
Magdala Works, Bunhill Row, London

BERTRAMS LIMITED,
ST. KATHERINE'S WORKS, SCIENNES, EDINBURGH.
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PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

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AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
7 cases	Antwerp	O. F. Melvin & Co	New York
21 ,,	,,	Kupfer Bros	,,
43 ,,	,,	De Jonge and Co	,,
7 ,,	,,	L. C. Wagner	,,
20 ,,	,,	J. W. Hampton	,,
7 ,,	,,	Dingelstedt and Co	,,
3 ,,	,,	Downing and Co	,,
3 ,,	Amsterdam	Miller, Sloane & Wright	,,
65 ,,	,,	Hensel, Bruckmann	,,
2 ,,	Bremen	Wicke and Co	,,
5 ,,	Hong Kong	Deacon and Co	,,
4 ,,	Hamburg	Borgfeldt & Co	,,
10 ,,	,,	Kauth, Nachod & Co	,,
5 ,,	,,	De Jonge and Co	,,
1 ,,	Havre	Perkins, von Bergen	,,
3 ,,	,,	Harnel, Reglander	,,
57 ,,	,,	American Tobacco Co	,,
35 ,,	,,	Sheldon and Co	,,
3 ,,	London	Dickinson and Co	,,
50 ,,	,,	Dennison Mfg. Co	,,
1 ,,	,,	Meyer and Co	,,
111 ,,	,,	J. Atkins	Boston
10 ,,	Liverpool	Kaufmann Bros	New York
7 bales	,,	Dennison Mfg. Co	Boston
47 ,,	Rotterdam	Elliott and Co	Philadelphia
7 cases	,,	De Jonge and Co	New York
13 ,,	,,	Eagle Paper Co	,,
14 ,,	,,	Kupfer Bros	,,

CHEMICAL FIBRE.

10 tons	Stettin	F. Bertuch and Co	New York

MANILLAS.

153 bales	Liverpool	Butterworth and Co	Boston
257 coils	,,	Dutton and Co	,,
33 bales	,,	Butterworth and Co	,,
80 ,,	,,	,,	,,
303 ,,	London	To order	Philadelphia

RAGS.

57 bales	Antwerp	Lewy Bros	New York
100 ,,	,,	Salomon Bros	,,
72 ,,	,,	A. Kazenstein	,,
112 ,,	Copenhagen	Lewy Bros	,,
99 ,,	Dunkirk	Train, Smith & Co	,,
409 ,,	Genoa	Jessup and Moore	,,
40 ,,	London	Darmstadt and Scott	,,
30 ,,	,,	Jessup and Moore	,,
233 ,,	Liverpool	Butterworth and Co	Boston
38 ,,	,,	E. P. True	,,
180 ,,	Rotterdam	Jessup & Moore	Philadelphia
10 ,,	,,	To order	,,

BLEACHING POWDER.

75 bdls.	Hamburg	Roessler & Hasslacher	N. York
172 ,,	,,	Kuhle and Co	,,
5 ,,	,,	Cooper and Co	,,
17 ,,	Liverpool	Reed, Halliday & Co	,,
272 ,,	,,	J. L. and D. S. Riker	,,
479 ,,	,,	,,	Boston
74 cks.	,,	J. Marble & Co	,,
50 ,,	,,	Reed, Halliday and Co	,,

CAUSTIC SODA.

100 drums	Liverpool	J. L. & D. S. Riker	New York
200 ,,	,,	Hill's Son & Co	,,
25 bdls.	,,	J. Marble	Boston
25 boxes	,,	,,	,,

SODA ASH.

14 bbls.	Liverpool	Lee and Co	New York
1200 bgs.	,,	Wing and Evans	,,
80 ,,	,,	J. L. and D. S. Riker	,,
107 cks.	,,	,,	,,
120 bgs.	,,	Wing and Evans	Boston
23 cks.	,,	,,	,,
20 ,,	,,	Churchman & Co	,,
63 ,,	,,	Warren and Co	,,

SIZING.

Quantity	From	Importer	Port
366 bgs.	Liverpool	Butterworth and Co	Boston
19 ,,	,,	,,	,,
277 ,,	,,	Train, Smith and Co	,,

SULPHUR.

334 bgs.	Liverpool	Linder & Meyer	Boston

WOOD FIBRE.

10 bales	Liverpool	Brown and Co	Boston

MANILLA FIBRE.

303 bales	London	To order	Philadelphia

ALKALI.

120 bgs.	Liverpool	Brown Bros.	Philadelphia

CHINA CLAY.

300 cks.	Liverpool	Dunn Bros	Philadelphia

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ISLER, C. & Co., Bear Lane, Southwark, London, S.E.

CHINA CLAY.

ROGERS, J. & Co., Truro, Cornwall.—Agents, W. G. Taylor and Co., Ltd., 83, Queen Victoria Street, London, E.C., and 44B, Lancaster Avenue, Manchester.

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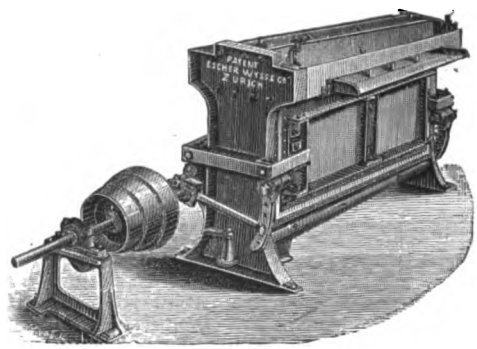

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The Care of Boilers.

The recent Board of Trade Report on "Boiler Explosions," in which complaint was made as to the negligence of boiler attendants, came none too soon, in view of the many accidents that are constantly occurring through carelessness or ignorance on the part of the man in charge of the boilers. As a means of preventing such accidents, or at least minimising them, the Manchester Steam Users' Association has had compiled a series of rules to be observed in the working of boilers, and has embodied them, under the title "Advice to Boiler Attendants," in the form of a large sheet for hanging on the wall of the boiler-room. By the courtesy of Mr. C. E. Stromeyer, the chief engineer of the Association, we are enabled to reproduce these instructions in extenso, and are sure that they will meet with approval from all users of steam power:—

General Working.

Treat your boilers with care and attention. Accidents are thereby prevented, expenses reduced, and the labour of firing lessened.

Water Level.—Before lighting fires, see that there is sufficient water in the boiler. Test the water gauges frequently, and keep the water level steady.

Blow-off Cocks.—Before lighting fires be sure that the blow-off cocks are closed, and not leaking. Occasionally feel if the blow-off waste pipes are hot. Blow off from bottom before starting the engine. Sediment has then settled in the elbow pipe. Blow off the scum before stopping the engines, but only when the water level is at the correct height. At such times most of the scum has collected in the troughs.

Lighting Fires.—Sudden changes of temperature may produce fractures or start leakages. Therefore never raise steam hurriedly. The top and bottom of a boiler should grow warm together. If convenient, fill the boiler with warm water through the economiser. If the boiler water is cold, allow fully six hours for raising steam. If pressed for time, fill the boiler to the top of the water gauge, fire slowly, and keep the safety valve open until steam blows off freely. After closing the safety valve, blow out the bottom cold water till the working level is reached. The pressure may now be raised more quickly.

Smoke Prevention.—Smoke and imperfect combustion are caused by an insufficient air supply or by premature cooling of the flames. Therefore after coaling, when the fires are black, admit air either at the door or through the split bridge. It is less wasteful to admit too much air than too little. With smoky boilers, or when hard pressed, keep the fires thin and even. Fire steadily. Don't coal all furnaces at once. Coal each furnace on one side at a time.

Emptying Boilers.—Do not empty the boiler while steam is up.

Overhauling, Cleaning and Inspection.—Clean the boiler monthly or oftener, remove the scale while soft; if possible while emptying the boiler. Sweep the soot off the boiler plates and clean the flues every three months, as well as on the occasion of the annual inspection. All leakages should be stopped, any cause of dampness in the setting should be removed, corrosion should be arrested. The fusible plugs should be cleaned on the fire side and water side once a month, and the fusible metal should be renewed once a year at the time of the annual inspection. All cocks should be kept oiled, and unless asbestos packed, they should be overhauled once every month. These cocks, the feed valves, steam stop valves, and all safety valves, should be overhauled annually on the occasion of the inspector's visit.

Warnings.

Manholes.—Before opening the manholes ease the safety valve so as to be quite sure that there is no pressure in the boiler. Before entering a boiler secure the steam valves and blow off cocks.

Safety Valves and Low Water Alarms.—The most disastrous explosions have happened with boilers whose safety valves had been jammed down or overloaded. Never overload or tamper with safety valves or with low water alarms. Ease or test them regularly every day. Be sure that they are in working order. If they will not work properly, reduce the steam pressure and then report to the manager. In doubtful cases he should write to the Manchester Steam Users' Association.

Steam Stop Valves and Steam Pipes.—Numerous fatal accidents have happened to boiler attendants while opening valves or drain cocks of steam pipes which had accidentally become filled with water. This water should be drained off, but only when the pipe is shut off from the boiler. The cracking noises which are sometimes heard in steam pipes, generally when opening a steam stop valve or a drain cock, are a sign that water is being shot about by the live steam. Retire at once, for the next blow may be an explosion. Steam pipes which slope downwards from the boiler stop valve to the engine appear to be quite safe. Horizontal pipes, particularly if their ends are turned up, are dangerous. They should be fitted with steam traps or at least with drain cocks, and should always be kept dry.

Collapsed Furnaces.—(1).—If, during the ordinary working of a Lancashire or Cornish boiler, the water was seen in the glass less than half-an-hour ago, but has disappeared, due to the feed having stopped, then probably no harm has yet been done. If the water was not seen for a long time, or if a mistake was made

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when last looking at the gauge glass, or if the water has disappeared suddenly and unaccountably, then there is a possibility that the furnace tops have come down, or are coming down, due to overheating. In either case, cool the plates from both sides as quickly as possible. Open the furnace doors to admit cold air, but don't disturb the fires, ease the safety valves so as to cause priming. The rising froth is not so dangerous as cold feed water, and will help to cool and stiffen the over-heated plates. Afterwards increase the feed till the water shows in the gauge glass.

Collapsed Furnaces.—(2).—If there is much scale, oil, or refuse in the boiler, the furnace sides and not the tops usually bulge in, generally very slowly. In this case cool the plates from the fire side; open the doors; if possible, cover the fires with damp ashes.

These accidents should be reported to the Manchester Steam Users' Association at once.

When exposed to these dangers the boiler attendant may prefer to retire. He should certainly not expose himself unnecessarily in front of the furnaces, and should warn others of the danger.

General Warnings.

Don't overload the safety valves or tamper with them.

Don't let the water-level sink out of sight.

Don't allow the gauge cocks to set fast.

Don't open the steam stop valves hurriedly.

Don't empty the boiler while steam is up.

Don't use unknown scale solvents or compositions.

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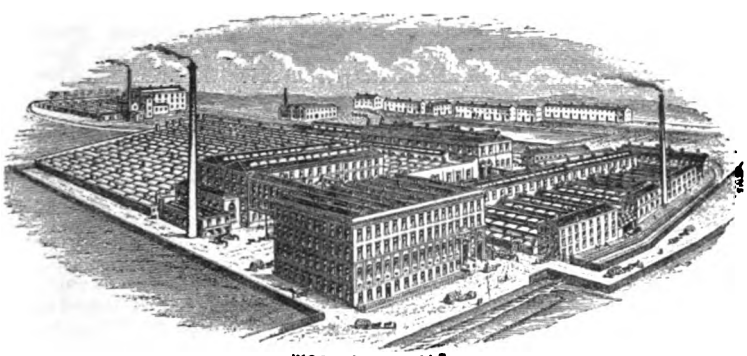

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	9	—	—
BELGIUM	1979	—	—
DENMARK	9	—	—
EGYPT...	221	—	—
FRANCE	498	14	—
FINLAND	126	—	—
GERMANY	3410	17	—
HOLLAND	37409	6	—
NORWAY	5594	—	251
SWEDEN	3665	—	—
U.S.A....	2710	109	26

Including the Following:—

Quantity.	From	Importer	Port
198 bales	Christiania	Cookson & Co	London
67 ,,	,,	Becker & Wagner	,,
112 ,,	,,	F. E. Foulger	,,
236 ,,	,,	Davies & Royle	,,
85 ,,	,,	J. Spicer & Son	,,
105 ,,	,,	J. Hamilton	,,
86 ,,	,,	Alsing & Co	,,
18 ,,	,,	Evans & Co	,,
21 ,,	,,	Davidson & Co	,,
9 ,,	Christiansand	Whitting	,,
12 ,,	,,	Becker & Wagner	,,
9 ,,	,,	Crabb & Co	,,
106 ,,	,,	W. Guppy	,,
74 ,,	Drammen	C. Davidson	,,
54 ,,	,,	C. Morgan & Co	,,
109 ,,	,,	Becker & Wagner	,,
3 ,,	,,	G. F. Green & Co	,,
200 ,,	,,	L. Henle	,,
101 ,,	,,	De Grelle Handret Co	,,
181 ,,	,,	H. Puckert & Co	,,
172 ,,	,,	Alsing & Co	,,
92 ,,	,,	Cookson & Co	,,
254 ,,	,,	Crabb & Co	,,
88 ,,	,,	Hernu, Peron & Co	,,
6 ,,	,,	Bott & Co	,,
463 ,,	Fredrikstadt	Olive & Partington	,,
173 ,,	Gothenburg	Spicer & Sons	,,
213 ,,	,,	Schenkenwald & Co	,,
32 ,,	,,	Brown, Brough & Co	,,
53 ,,	,,	Spicer & Sons	,,
34 ,,	,,	E. Saunders & Sons	,,
50 ,,	,,	Crabb & Co	,,
71 ,,	,,	J. Spicer & Sons	,,
27 ,,	,,	H. Huber & Co	,,
20 ,,	,,	G. Smythe & Sons	,,
7 ,,	,,	E. E. Sabel	,,
61 ,,	,,	Waterlow & Sons	,,
902 ,,	,,	Skarblacka	,,
77 ,,	,,	J. Eberstein	,,
70 ,,	,,	,,	,,
56 ,,	,,	Becker & Wagner	,,
88 ,,	New York	Lepard & Smith	,,
168 ,,	,,	Spicer Bros	,,
508 ,,	,,	Grosvenor, Chater & Co	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	1897	809	333
ARGENTINE	—	2	15
AFRICA	171	75	93
B. W. INDIES	—	23	—
B. GUIANA...	4	14	5
BELGIUM	73	29	4
CAPE COLONY	—	56	128
CANADA	27	8	—
CHINA	26	5	33
DENMARK	17	—	13
EGYPT	34	21	—
FRANCE	468	139	94
GERMANY	30	9	17
GIBRALTAR	15	74	—
HOLLAND	99	4	27
INDIA	224	418	36
JAPAN	931	6	—
MALTA	—	—	10
MAURITIUS	39	2	2
MADAGASCAR	65	—	—
NEW ZEALAND ...	588	421	931
NORWAY	65	—	—
PORTUGAL	—	45	85
SPAIN...	—	18	12
SWEDEN	—	—	45
U.S.A.	—	16	—
W. INDIES...	—	—	22

FROM GLASGOW.

AUSTRALASIA	917	176	—
GERMANY	—	2	—
HOLLAND	—	—	10
INDIA	60	—	—
NEW ZEALAND ...	—	16	72

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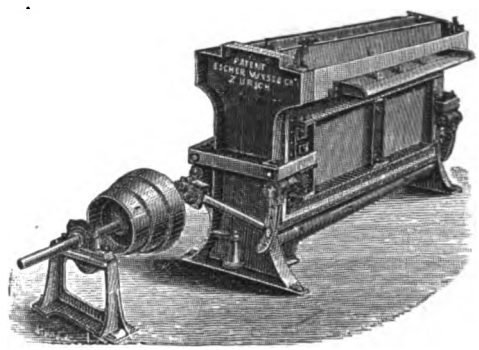

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Salt Union, Ltd.

PROPOSED ELECTROLYTIC PRODUCTION OF CHEMICALS.

The annual meeting of the shareholders of the Salt Union, Ltd., was held at Winchester House, E.C., on Monday last. The Hon. Lionel Ashley presided, and there was a crowded attendance of shareholders.

The CHAIRMAN regretted the very unsatisfactory results of their trade last year, and said they might be summarised as due to the decrease in the price of salt, to the decrease in the quantity sold, and the increased cost of make. They had had during last year to reduce the price of some kinds of salt more than 1s. per ton. The average price of salt during the last seven years had fallen 3s. 4d. per ton. He need not remind them that every 1s. per ton on a million tons amounted to £50,000. With respect to the chemical salt trade, there had been a still further decrease during the year. He mentioned a year ago that in 1890 the amount of solid salt decomposed for making alkali was 602,769 tons; and in 1896 it was only 360,929 tons. The lessened demand for solid salt in 1897 as compared with 1890 might be taken at 254,000 tons. On the other hand, the amount of brine decomposed by the ammonia-soda process had increased from 27,400 tons in 1880 to 428,600 tons in 1896. The works that were taken over by the Union were all laid out and equipped on the basis of a continuation of the demand for solid salt for chemical manufacture. They had therefore had to face revolution in the trade and to find a new way in which they could utilise their dormant capital and their stores of brine. He had said at a previous meeting that it might be desirable to use their resources for the manufacture of chemicals, and a number of patents and processes had been investigated by them. They had tried one during the year, and the results gave some promise of success.

After some opposition the report and statement of accounts were adopted. A motion to remove the head offices to Liverpool, and another to re-appoint the committee of shareholders, were agreed to on a poll being taken.

BERGVIK CO., LTD.

The ninth ordinary meeting of the shareholders in the Bergvik Co., Ltd., was held on Friday, last week, at Winchester House, E.C.

Mr. C. C. CURTIS, who presided, reminded them that when they met last year he was able to inform them that, for their early sales, the board had obtained better prices, and that they felt confident about the future course of the market. He was now pleased to say that those expectations were fully realised, with the result that last year's profits were better than they had been for a long time; in fact, the accounts now submitted were the best they had had since 1889. Their profits were, of course, dependent on the price of timber. Turning to the accounts, he said that the board were in a position to recommend a dividend of 6 per cent. on the deferred shares, which was 1 per cent. more than in the previous year, but that was a minor matter compared with the satisfactory way in which they were able to strengthen the general position of the company. They had written off in Sweden £11,321 from the buildings and works account, thus reducing it to the sum at which it stood when they took over the property, although, in the meantime, they had made considerable improvements and additions. They had also, besides carrying forward rather more than last year, added £10,000 to the reserve fund in Sweden, making it now £30,000. With regard to the business of the current year, he said they had already sold a considerable portion of their manufacture, and the prices so far obtained compared well with those of a year ago. He saw no reason why prices should not be maintained. The general trade of the country promised to be again good, and they might, therefore, expect a large demand for timber. He concluded by moving the adoption of the report.

Mr. F. F. LIDDERDALE seconded, and it was agreed to.

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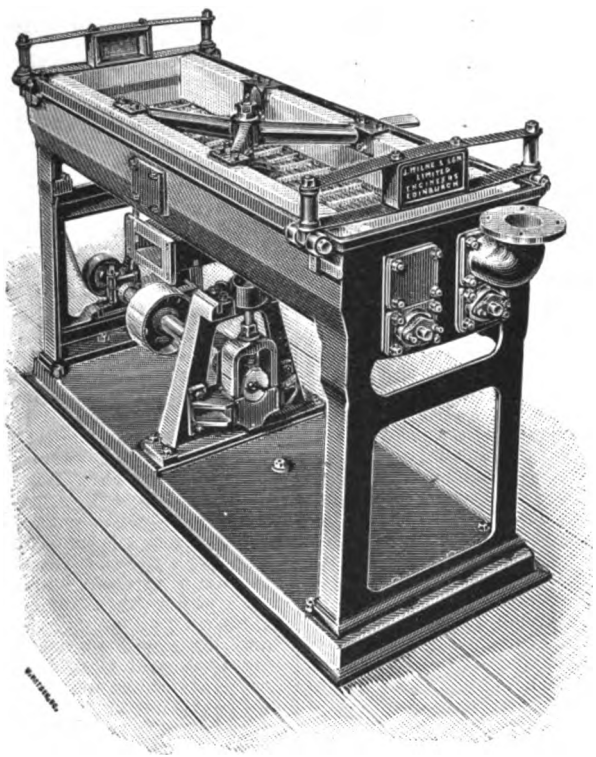

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American Paper in Japan.

Japanese papermakers are giving particular attention to the production of cheap paper. Fine paper is not largely manufactured. To supply the demand for fine paper, exports have been made by some foreign countries through the hands of foreign residents at Kobe or Yokohama. Among the principal countries were England and Germany, and America ranked next to these two countries. However the demand for paper in the country has been very largely increased within the last year or two, and the native manufacturers have found themselves unable to meet it satisfactorily. As a natural result, the prices of the materials and wages of labourers increased, especially after the China war, and all this tended to increase the price of paper. The native production of paper grew dearer and dearer, and then a demand for cheap foreign paper sprang up. There were two conditions favourable to the importation; first, the scarcity of the native supply, and second, the increase of the price of the native production.

Incidentally some American paper manufacturers, seeking for a new foreign market for low grades of paper through the medium of the agents, learned of the earnest demand in Japan, and cheap paper began to be introduced to the country from America. The paper is fit for printing news journals, books, etc., but the quality is inferior to the native printing paper. The market price is 5·50 dols. per hundred pounds, cheaper than that of the native production, which is from 7 dols. to 8 dols. per hundred pounds.

Accordingly the paper was much in demand by newspaper publishers and book printers, and now two-thirds of the Tokyo newspapers are printed on American paper. Every mail steamer which enters Yokohama or Kobe is laden with the paper, and on its arrival, the paper dealers all hasten to the agents in the settlements, and struggle to buy the quantities they require. The sources from which it come are unknown as yet, but it is said by an experienced paper dealer in the country that the source must be only one, though the agents to whom it is sent are many, because if the paper came from several sources, there must be some difference in the quality. But this is not the case.

THE PACKING OF GOODS FOR EXPORT IN GERMANY.

The latest report from the British Legation in Munich contains some observations on the great importance of packing goods in such a way as to set them off to the best advantage, and of the improvements made in Germany in this respect during the past few year. Ten years ago German consular reports contained numerous complaints of defective packing and arrangement; but this has now been altered, and the Germans are said to surpass the French in the tasteful and suitable manner in which they present their wares to foreign buyers. For most goods traders have elegant cardboard boxes with coloured printing, decorative bands, and labels printed in gold, which ornament the goods they contain. Notepaper is packed in beautiful cardboard boxes and cases. Special industries have been created for the production of elegant packages, and these have, in fact, become exporting industries themselves, and supply, for instance, Russia, so that even Paris cannot compete with them. "Altogether a large proportion of the remarkable growth of the export trade of Germany is attributed by many authorities to the tasteful decoration of their goods by enterprising manufacturers." In addition the requirements of distant countries in regard to packing are carefully studied. The various methods of transport after arriving at the ports of discharge are known and provided for, as well as the provisions of the different tariffs, so that goods may be packed in such a way as to pay as little duty as possible.

NEW USES FOR PAPER.

Well, if paper is booked in one way, it is going to crop up in another. We are going to have paper friction wheels. These are said to possess three points of superiority over those made of metal. The chief is the extraordinary hard, smooth, and reliable frictional surface that is developed on the paper face of the wheel, and which makes a most suitable surface for transmitting power. Second, the paper wheels will stand much higher velocity without bursting as a result of centrifugal force; and, third, the wheels are lighter. A hindrance to their use until lately has been the means for setting the wheels and keeping them in contact accurately. This has now been accomplished successfully. Another use to which paper pulp will be put is boat-building. I need not describe the process. However, it is simple and scientific, and will no doubt be improved as time goes on. Well, we shall have paper huts for cold climates such as Alaska. The boarding only will be sent out, but these will be very light and lasting, and it is said that a man will be able to carry about as many on his back as shall suffice to build his hut. I myself have already made trial of a paper bungalow, and there is nothing to beat it. Then we shall have paper draperies, paper cooking utensils, and paper plates. These latter will be found very handy for people who go caravanning or camping out in summer.—From "Nature and Science," by Gordon Stables, M.D., R.N., in *Liverpool Weekly Mercury*.

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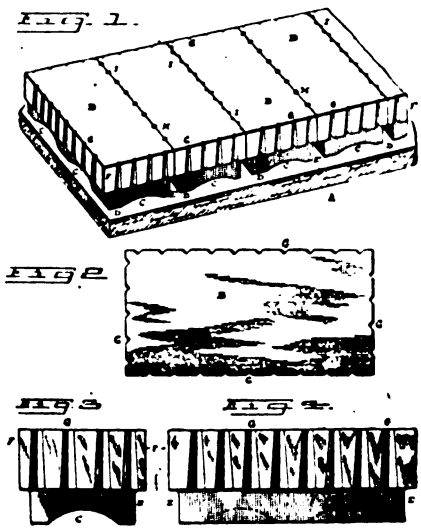
Drainer Floors for Paper Mills.

The accompanying illustrations relate to the floors of draining tanks or vats used in paper manufacture and for other similar purposes. The object is to produce a floor which will permit the liquids or chemicals in a mass of paper pulp to escape from the mass without discoloration of liquid or pulp, and without permitting the escape of the half-stuff, pulp, or fibre to any large extent, and to this end the floor of the drainer is constructed of an impermeable base, such as concrete or cement, and a porous covering of bricks, tiles, or blocks of peculiar form, as hereinafter described.

Fig. 1 is a perspective view of a broken section of the floor, showing the brick, tile, or block covering. Fig. 2 is a top plan of the



DRAINING FLOOR.

brick or block. Fig. 3 is an end view of the brick or block, and Fig. 4 a side view.

The foundation or base A may be a flooring of any suitable material impermeable to liquid, and is preferably a concrete flooring with a smooth surface, inclining to one side or corner, so that liquids will flow in the direction of the incline. This is the permanent floor of a bleaching or straining vat, in which the pulp is stored, generally for several days or weeks, to permit the escape of liquid and a thorough bleaching of the stock. On this permanent floor there is formed a draining floor of bricks B. These bricks may be of clay, concrete, glass, or other material not much subject to the action of the chemicals used in bleaching paper stock. The bricks may be about the size of building brick or smaller or larger, according to circumstances.

Each brick B has a plane upper surface as smooth as convenient. The base has an arched concavity C, extending from end to end of the brick or block, and preferably formed in the mould before the burning or consolidation of the material of which the brick or block is composed. This arch C is to permit liquid to run along under the body of the brick, the brick being supported on floor A by side ribs D D at each side of the arch or concavity C.

The body of the brick is in form of parallelogram; but there is a recess E along each side and end of the lower portion, so that when a floor is covered with the bricks, as in Fig. 1, open passages E' will be found along the sides and ends of the bricks, said passages extending up for perhaps one-fourth or one-third the thickness of the brick or block.

The overhanging edges F of each brick or block above the recesses E have notches G extending in vertical direction. The notches G are broadest and deepest at their lower ends and narrowest at the upper corner of the brick, so that liquid and also particles of pulp or other material which may enter these notches or grooves will have a constantly enlarging passage as they move downward, and thus there will be no tendency for the notches or passages to clog or fill up. The notches terminate at the bottom of the overhang F, and anything passing down these passages will find much freer passage when it reaches the passages E'.

The notch is on one end and one side of the brick are not in line with or directly opposite to the notches on the other side and end of the brick. In fact, the notches may differ both in number and position. This enables the paver to so lay the brick floor that the notches in two bricks may come opposite each other, as at H H, Fig. 1, when openings or passages nearly rectangular will be formed by the notches in two adjacent bricks, or by turning the brick around the notches will not be in line and triangular passages, as at I I, will thus be made by the notches in the edges of the bricks.

In general the liquid which passes down the notches or openings between the edges of the bricks may flow off by the passages E' until it finds a lateral passage of similar character, along which it may pass until it enters the arched passages C; but as a modification of the invention the base of the bricks or of some of them may have lateral arched passages C', as well as longitudinal arched passages C. Care should be taken that the base ribs D of the bricks or blocks be not cut away to such an extent as to give an insufficient support to the brick or block.

It will be seen that bricks of the form described permit of a considerable variety in the character of the draining floor covered by them, and that excellent opportunity is afforded for the escape of the liquid, while excluding all solids too large to pass through the notches in the edges of the overhanging part of the bricks or blocks. The passages beneath the overhang at the sides of the brick or block are not likely to fill up with pulp or fibre conveyed down through the small notches, as the liquid will flow quite freely along these passages and

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carry off any small pieces of pulp which have escaped through the notches at the sides of the brick.

The number of notches in the edge of the brick will depend on the size of the brick, and the material of which it is composed. The notches should not be so near together that the projections between them will be easily broken, nor so far apart as to preclude good drainage.

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A B..	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba.	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C..	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D..	71	28	750	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E..	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F..	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G..	108	42½	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H..	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55½	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I..	160	63½	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z..	210	82½	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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4 cases	Antwerp	M. Meyer	New York
5 ,,	,,	Kupfer Bros	,,
1 ,,	,,	Devoe and Co	,,
130 ,,	,,	Sheldon and Co	,,
41 ,,	,,	Hensel, Bruckmann	,,
25 ,,	,,	Scovill and Adams	,,
10 ,,	,,	Stiner and Co	,,
20 ,,	,,	J. W. Hampton	,,
22 ,,	,,	P. Ruttmann	,,
8 ,,	,,	Knauth, Nachod & Co	Boston
1 ,,	,,	Greenough, Adams & Co	,,
6 ,,	Hull	J. Hunter	New York
3 ,,	,,	,,	,,
15 ,,	Havre	J. P. McHugh	,,
6 ,,	,,	Schulze Downing and Co	,,
7 ,,	,,	R. Gledhill	,,
1 ,,	,,	Pottier Stymus and Co	,,
2 ,,	Hamburg	Sheldon and Co	,,
2 ,,	,,	Amsinck and Co	,,
6 ,,	,,	A. Kraut	,,
37 ,,	,,	Lindermeyr and Sons	,,
55 bales	,,	To order	Philadelphia
3 ,,	Liverpool	P. H. Petry	New York
10 ,,	,,	De Jonge and Co	,,
9 ,,	,,	Knauth, Nachod & Co	,,
16 ,,	,,	Stone and Co	,,
4 cases	London	W. Fuller and Co	,,
5 ,,	,,	Nelson and Co	,,
5 ,,	,,	B. C. Roberts	,,
3 ,,	,,	Favor, Ruhl and Co	,,
1,6 ,,	,,	J. Atkins	Boston
2 ,,	,,	Bainbridge and Co	New York
11 ,,	,,	Dickinson and Co	,,

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15 tons	Hull	F. Bertuch and Co	New York

MANILLAS.

87 bales	Antwerp	Salomon Bros	Boston
178 ,,	Dundee	Hempstead and Co	New York
61 ,,	Glasgow	Train, Smith and Co	Boston
19) ,,	,,	Butterworth and Co	,,
92 ,,	Leith	Train, Smith & Co	New York
205 ,,	,,	Jessup & Moore	,,
13 ,,	London	Train, Smith & Co	Boston
111 ,,	,,	E. P. True	,,
46 ,,	,,	Butterworth and Co	,,
95 ,,	Liverpool	,,	,,

RAGS.

89 bales	Antwerp	A. Katzenstein	New York
34 ,,	,,	Train, Smith and Co	,,
142 ,,	,,	J. Pirnie	,,
88 ,,	,,	J. W. Hampton	,,
376 ,,	,,	J. Pirnie	,,
514 ,,	,,	Salomon Bros	Boston
173 ,,	,,	Butterworth and Co	,,
504 ,,	,,	Train, Smith & Co	,,
61 ,,	,,	Castle and Gotheil	,,
21 ,,	,,	W. F. Corne	,,
880 ,,	,,	Dutton and Co	,,
187 ,,	Genoa	Jessup and Moore	New York
51 ,,	Hamburg	Lewy Bros	,,
92 ,,	,,	Salomon and Co	,,
81 ,,	,,	,,	,,
166 ,,	Hull	Lewy Bros	,,
122 ,,	,,	Hempstead and Co	,,
219 ,,	,,	Butterworth and Co	Boston
185 ,,	Leghorn	Jessup and Moore	New York
50 ,,	,,	Castle and Gotheil	,,
145 ,,	London	A. Kazenstein	,,
123 ,,	,,	Train, Smith & Co	Boston
59 ,,	,,	E. P. True	,,
171 ,,	,,	Butterworth and Co	,,
198 ,,	Liverpool	Train, Smith & Co	,,
219 ,,	,,	Butterworth & Co	,,
5 ,,	Rotterdam	Downing and Co	New York
83 ,,	,,	W. H. Van-der-Toon	

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60 ,,	,,	F. A. Reichard	,,
1 ,,	,,	Fuerst Bros	,,
100 ,,	,,	Roessler & Hasslacher	,,
58 ,,	,,	,,	,,
95 bdls.	,,	To order	Philadelphia
53 cks.	,,	F. Jordan	,,
20 ,,	Glasgow	A. Turnbull	Boston
75 drums	Hamburg	Roessler & Hasslacher	,,
350 ,,	,,	,,	New York
188 cks.	Liverpool	J. L. and D. S. Riker	,,
41 ,,	,,	Reed, Halliday and Co	Boston
120 ,,	Marseilles	F. A. Reichard	New York

CAUSTIC SODA.

100 bdls.	Liverpool	To order	Boston
200 drums	London	Hill's Son & Co	Philadelphia
13 ,,	Rotterdam	Muhlens and Co	New York

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CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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Directory of Paper Consumers.

THE "NEWSPAPER PRESS DIRECTORY," published by C. Mitchell and Co., 12, Red Lion-court, Fleet-street, E.C., is one of the handbooks that are indispensable to all who have dealings in any way with the press of the country. The new volume for 1898 is just issued, and contains much useful information about the newspaper press and kindred matters, together with special articles on "The Law of Copyright and Libel," by Hugh Fraser, Esq., M.A., LL.D.; "Society Journalism," by Miss Laura Smith; "London Local Papers," by Walter Wellsman, F.R.S.L.; special articles in the Colonial Supplement on "Trade Within the Empire," by Mr. E. E. Williams; "South African Trade and Traffic Systems," "Freight Rates to South Africa," "Canada," and "Representative Colonial Newspaper Offices." We note that there are now published in the United Kingdom 2,418 newspapers, distributed as follows:—

England—		
London	470	
Provinces	1,408	—1,878
Wales		103
Scotland		236
Ireland		179
Isles		22

Of these there are—

185	daily papers published in	England
6	ditto	Wales
19	ditto	Scotland
29	ditto	Ireland
4	ditto	British Isles.

On reference to the first edition of this useful directory for the year 1846, we find the following interesting facts, viz., that in that year there were published in the United Kingdom 551 journals; of these 14 were issued daily, viz., 12 in England and 2 in Ireland; but in 1898 there are now established and circulated 2,418 papers, of which no less than 234 are issued daily, showing that the press of the country has more than quadrupled during the last fifty-two years. The increase in daily papers has been still more remarkable; the daily issues standing 234 against 14 in 1846. The trade returns for the whole of the British Empire are set forth in minute detail, under the heads of the various colonies and dependencies. The statistics of British trade with foreign countries are also given. The Gazetteer Sections contain, as usual, full particulars of the colonial newspaper press, and throughout are replete with the latest and most reliable information.

THE old-established firm of Watkins and McCombie, 7, Paternoster-row, E.C., has been formed into a limited company, and will be carried on in future as Watkins and McCombie, Ltd. The conversion will in no way affect the management of the business, which will be conducted as heretofore, and no shares have been or will be offered to the public.

LEIPZIG SPRING EXHIBITION, 1898.

Referring to the paragraph on this subject which appeared in a recent issue, we understand that manufacturers of novelties in the paper and stationery trades are particularly solicited to participate in the Exhibition, where good opportunities will be found to introduce their wares to foreign buyers. The Exhibition is not intended to be a show for the general public, but as a mart for buying and selling, and introducing the latest novelties. A directory of the Exhibition will be published by the Leipzig Chamber of Commerce containing the names of all exhibitors, and as this must be ready on the opening day exhibitors are requested to communicate at once with the Exhibition committee. Space can be reserved by communicating at once with Bruno Nestmann, chairman of the Exhibition committee, and enclosing the necessary remittance. The Exhibition will comprise paper of all kinds, stationery goods, cardboards, fancy papers, paper box fittings, envelopes, articles made from paper pulp, etc., etc.

TARIFF CHANGES.

UNITED STATES.

Figures lithographed and stamped or cut from heavy paper or cardboard representing men, women, and children and costumes; birds and animals; cats and dogs in cradles with two rockers are assessed for duty as dolls and toys at 25 per cent. under paragraph 321, Act of August 28th, 1894.

Japanese paper umbrellas are dutiable as manufactures of which paper is the component material of chief value at 25 per cent. under paragraph 425 of the Act of October 1st, 1890, and not as umbrellas.

VENEZUELA.

According to a note in the *Journal de Tarifs et Traites de Commerce* on the customs tariff of Venezuela, books are divided, for the purpose of duty, into several categories.

By Article 18 are admitted free of all duty:—Books printed in leaves or sewn, treating of science, art, and trades—catalogues and newspapers.

By Article 152 a duty of 25 cents per kilogramme is levied on books printed in sheets, or sewn, not included in class 1: pamphlets, registers, and school copy books in the same form.

By Article 253 a duty of 75 cents per kilogramme is levied on printed books, bound, except those named in class 8.

MR. M. ROBERTS-JONES "Handbook on the Workmen's Compensation Act" has met with such a demand that a fifth edition has been issued, the fourth edition of 5,000 copies having been disposed of within a month of its issue.

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JAMES BERTRAM & SON, LTD

Leith Walk Foundry,

ESTABLISHED 1845. **EDINBURGH.**

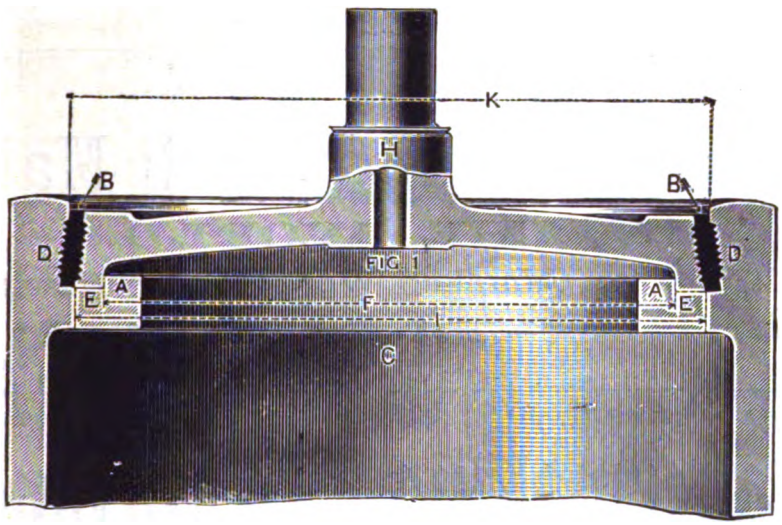

FIG. 1

WHITE'S Patent DRYING CYLINDER.

The ends and manhole cover fixed without through going bolts. An absolutely steam tight joint is ensured, leakage being impossible. Over 200 of the Cylinders have already been made giving entire satisfaction.

WHITE'S Patent OSCILLATING STRAINER,

is the best and most efficient in the market. Over 250 of these are now at work with great success.

☛ *FULL PARTICULARS ON APPLICATION* ☚

TELEGRAMS: "BERTRAM. LEITH."

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Latest REGISTERED Trade Mark—

IF YOU WANT A
DANDY ROLL QUICKLY
TELEGRAPH "Dandyrolls London"

Or write to

The Largest Dandy Roll Makers
IN THE WORLD.

ESTABLISHED 1792.

Campbell Works, Stoke Newington,
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GOLD MEDAL, 1897. Highest Award of the International Exhibition, Leipzig.

Papermaking Machinery.

Highest Grades. Latest Designs. Advanced Ideas.

H. FÜLLNER,

Established 1854. Warmbrunn.

Specialities

FAST RUNNING MACHINES.

GOULD SCREENS.

PATENT FIBRE SAVING APPARATUS.
Recommended by all Governments for retaining fibres from waste water. Unsurpassed in effectiveness and cheapness.

PATENT CONTINUOUS FELT WASHER.
No stoppage in manufacturing operations.

PATENT HOFFSÜMMER HOLLANDER.
Smallest and most effective type in existence.

Representatives for the United Kingdom: HIGHEST REFERENCES.

H. BERTRAM & CO., 28, Queen Street, London, E.C.

Printed and Published by W. JOHN STONHILL, 58, Shoe Lane, LONDON, E.C. March 4, 1898.

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SOLE
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RED-JOINED
ALLY SEAMED
DYWELL
RE WORKS
LASGOW
T.A.
ADYWELL
GLASGOW

Registered at the General Post Office as a Newspaper

The World's Paper Trade Review

A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 10. LONDON: MARCH 11, 1898. EVERY FRIDAY. PRICE SIXPENCE.

USE OF Electric Motors in Papermaking.*

By Prof. Louis Bell, Ph.D.

Every special industry presents to the electrical engineer a series of problems peculiar to itself. We have fortunately passed out of the period during which electric motors were regarded as the craftsmen of an omnipotent mystery. The only halo now surrounding them is occasionally noted about the commutator with remarks far from suggesting reverence. To-day electric power must stand upon its own merits, and be accepted or rejected as it is or is not well fitted for the purpose in hand.

Speaking broadly, the fewer intermediaries between the point at which power is generated and that at which it is utilised, the better for economy so far as power is concerned. And, therefore, if an electric motor is thrust between the prime mover and its work it must show good cause for its presence. The energy necessarily lost in it must be compensated by a greater saving of energy somewhere else, or by some economy in time or labour sufficient to be worth the while.

Whenever electric motors have proved important adjuncts in any manufacturing process it has usually been for one or more of the three following reasons, each of them definite and sufficient. First, they may have enabled a cheap prime mover to be substituted for a costly one. Second, they may have materially reduced the energy lost between the prime mover and the point at which its power must be applied. Third, through their characteristic facility of application, they may have been able to replace manual labour at some point in the process of manufacture. Beyond this electricity may have an intrinsic value as the source of new processes, but electric power as such takes in these no part.

As types of these particular functions of electric power may be mentioned, first, the transmission of energy from water power, thus replacing steam engines; second, the use of motors to replace long lines of shafting, belting, and gearing; and third, electric machine-tools, cranes, and shop tramways.

In any particular art these several items apply with very varied force, and the vital point of interest here is to see if they may have a direct bearing on operative economy in the great papermaking industry.

In discussing this general problem we must remember that no two mills are exactly alike in their requirements any more than in their situations. One may be so circumstanced and may be working in such a way as to make the securing of cheaper motive power of paramount importance; another may have this already, but may need very badly efficient means of power distribution, while a third may need labour-saving appliances more than anything else. Each of these conditions requires different treatment, and, what is more, each case is likely to need special treatment of its own. The fact that a certain plant gives good results when electrically equipped in a certain way is of no value whatever in determining a similar equipment for your particular mills. It merely shows that a

* A Paper read before the American Paper and Pulp Association.

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properly planned electrical equipment works well, a fact which nobody in the present state of the art is inclined to deny. In fact, the same arrangements elsewhere may be anything but desirable, for in making a Chinese copy one is quite sure to copy all the mistakes of the original and probably will add some of his own. Beware, then, of electrical panaceas—one might as well take cod-liver oil for a toothache as to apply some beautiful system of electrical driving to a place in which it is not needed.

In this year of grace 1898 we must regard the electric motor merely as an exceedingly convenient and efficient means of supplying power where it is wanted, to be used like a belt or a shaft where it will best serve the purpose — and nowhere else. Fortunately too, many kinds and makes of electric motors are readily obtainable, most of them thoroughly good and reliable. In certain places some varieties of the genus motor are better than others, just as in some cases gearing is better than belting. Selection must be made with reference to fitness for the purpose in hand. The most that can be done here is to point out the conditions that must be met and to indicate some of the ways in which motors can be advantageously employed in the paper industry.

Let us first take up the matter of cheap motive power, and its bearing on the use of electrical machinery. At the present the principal raw material used in paper making is wood, and the mill must generally get within easy range of its wood supply, whether the situation is otherwise convenient or not.

As grass, straw, cornstalks and other varieties of cellulose become more important in papermaking the forest is less important, but in all cases the raw material is somewhat troublesome and costly to transport, and good facilities for getting it cheaply are of fundamental importance. Secondly, the power for working up this material must be easily obtained, and at least a moderate water supply is necessary in the process. Finally, aside from all questions of power, heat must be supplied at certain stages of the operations. Now this concentration of cheap wood, ready power and cheap fuel is not altogether easy to secure. It has landed many paper mills in very out-of-the-way places, and forced them, whenever possible, to locate at some point where wood is plenty and water-power is available.

The consequence is that numerous mills have to face the dilemma of paying heavy freight bills on their wood or producing their power by steam where the cost of coal is high. Inasmuch as steam is needed in the process of manufacture, it is quite usual to drive part of the plant, particularly the Fourdrinier machines, by engines, using the exhaust steam for heating purposes.

Now, at the risk of being accused of "teaching my grandmother to suck eggs," I am going to enter a vigorous protest against this practice. It is most emphatically not true that steam thus obtained is cheaply obtained. It implies in the first place very uneconomical use of the engines, and, in the second place, it virtually amounts to generating steam for heating at a high pressure and reducing this to eight or ten pounds by the use of a very expensive reducing valve. High pressure steam has its legitimate uses for heating, but this is not one of them. It is well within bounds to say that the fuel bill for the power is doubled by thus working the engines non-condensing with considerable back pressure, and the cost of the steam used for the heating is thus really a most unpleasant item. For example, take a plant requiring 10,000-h.p. hours per day, and 50,000 pounds of steam for heating purposes. If worked in the common way there will be required for power not less than 300,000 pounds of steam, demanding burning, say, 20 tons of coal under the boilers. Working condensing the same power can be obtained for about 180,000 pounds of steam, say for 12 tons of coal, while the extra 50,000 pounds of steam for heating calls for about three tons more, making a total of 15 tons daily. Now, in Yankeedom, whence I hail, five tons of coal per day is usually considered worth saving, to say nothing of lessening the boiler capacity required by nearly one-half. A demand for heating capacity so great as to render the power generation a mere accessory would only show very bad utilisation of the heat.

The sum and substance of this matter is that running engines in an uneconomical manner is a bad thing first, last and always, none the less bad when hidden behind losses still greater.

Now, the bearing of this, so far as electrical operation is concerned, is to indicate the use of steam for heating purposes only whenever water power is fairly available. And, in my opinion, the first and greatest use of electrical apparatus in papermaking is in supplying cheap motive power from waterfalls, enabling the mills to be located at points favourably situated with respect to cheap raw material and easy shipment of product. These advantages once gained, the power can be delivered from the nearest available waterfall at a cost generally lower than the local cost of steam power.

It must be distinctly remembered that power thus transmitted electrically is not at all necessarily cheaper than steam power, but in a very large number of cases it is. From the investigation of probably several hundred propositions of this kind, I feel well within the bounds of truth in saying that with coal at about 3 dols. per ton the electrical transmission of 500 horse-power or more from an average water-power anywhere within a radius of 15 miles will pay nine times out of ten. This is the case with power transmitted for ordinary purposes, and when, as in papermaking, power is often used continuously throughout the twenty-four hours, the conditions become even more favourable for electric working.

At the present time there are above a hundred electrical power transmission plants operated from water powers in this country alone. A number of them have been work-

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ing for five years or more, and I have yet to learn of a single case in which these plants have been unable to compete with steam power on satisfactory terms, save in the case of some very large steam plants. Transmission has uniformly proved successful, both in the matter of cost and in reliability, which in many industries is quite as important. And in papermaking regions water powers can generally be more cheaply secured and developed than when they are located near a city which furnishes in itself a good market for power. I am glad to say that in a few instances transmitted power is actually in use in paper mills, and all the reports received seem to indicate the success that was to be anticipated. There is nothing experimental in electrical power transmission under ordinary circumstances. The apparatus as now constructed is as manageable and reliable as steam apparatus, and may be installed with the same assurance of success. Until within the past three or four years one would have hesitated to advise driving from water power, either directly or indirectly, any machinery requiring uniform speed at varying load. Now, however, water wheel governors are regularly in use which are able to hold the speed with an exactness quite comparable with the governing of a good engine. There are few places where uniformity of speed is more highly valued than in a cotton mill, and there are now a half-dozen large mills relying entirely on electrically transmitted power—and using it because it is actually cheaper than steam power, although some of the very best steam practice is to be found in the cotton industry.

With plenty of general experience as a guide, there is no good reason why a paper mill, wherever the situation is favourable, should not derive all its motive power from energy electrically transmitted, and with great improvement in economy.

An ideal situation would be somewhat as follows :—Our mill should be situated within easy distance of a good wood supply, if wood is the raw material used. If it is actually in the forest country so much the better; if not, the supply should be accessible, if possible *via* more than one railroad, to make the adjustment of freight charges a trifle easier. For the same reason, two roads out for the finished product are desirable.

Next, a good water supply should be at least within easy pumping distance, and fuel, coal, or wood, if wood is cheaper, should be at a fairly reasonable price. Now, as to power, it is desirable to get within 10 or 15 miles of a good water privilege. If one can locate right at the water power without sacrificing anything material in the other respects mentioned, why so much the better; but the chances are against it.

In point of fact, in electrical transmission work the distance of transmission within the limits suggested is not an important consideration, for under such circumstances the line is the least expensive portion of the plant. Having secured the water power, develop it, and put in an electrical transmission plant to deliver at the mill all the power required for every purpose. The steam plant is then restricted to the very simple requirements of a boiler equipment for heating only, and the fuel bill is correspondingly reduced to its lowest terms. Then every part of the mill would be driven by electric motors, from the log-handling machinery at one end of the process to the winding rolls at the other. The procedure at first seems indirect, but the gain is twofold, and by no means small. In the first place, great freedom in location is secured—a freedom which in many cases may mean the saving of many thousands of dollars per year in freight bills alone. Second, whatever power is required by the mill is obtained at a lower cost than would be otherwise possible. And to pay for these advantages you are confronted by the cost of the power plant.

I can in no way better emphasise the dollar and cent. side of the problem than by making an estimate for just such a transmission, a perfectly typical case of the kind. Let us assume that one of you has a mill which requires, say 1,000 horse-power delivered continuously for all purposes. Near the proposed site of the mill there is merely a stream big enough to supply water for general purposes, but 10 miles away is a good water power which can be secured without unreasonable expense. What will be the cost of the power-transmission plant necessary to do the work?

To begin at the power house, we must allow, say, 1,000 kilowatts in capacity, with preferably a generator in reserve, say three 500-kw direct-connected machines, if the speed of the wheels will allow. The market price of such machines, complete with station equipments, and wound for 5,000 or 6,000 volts, including installation, will not exceed 10,000 dols. each. It is almost unnecessary to state that for a transmission of this length one of the polyphase systems would always be installed. The present tendency is toward high-voltage generators, connected directly to the line for such cases, although low-voltage generators with raising transformers can be obtained for not far from the same price. In any event, reducing transformers for 1,000 horse-power would have to be installed at the mill, in large units of which the aggregate cost would not exceed 5,000 dols. to 6,000 dols. The 1,000 horse-power in motors would be needed for driving the various parts of the mill, and assuming units of 100 horse-power or more, the probable cost of these motors would be 15,000 dols. to 20,000 dols., depending somewhat on the size and speed of the various units. This completes the necessary electrical machinery. The line, assuming, say, 6,000 volts delivered and 10 or 12 per cent. drop, could be erected with all copper up for less than 20,000 dols. Altogether, the machines at both ends of the line and the line itself could be installed, including a suitable station, for about 80,000 dols.; under favourable conditions for somewhat less.

The cost of the water privilege and the necessary hydraulic work is the most uncertain factor in working out any assumed

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case of power transmission. It may fall even to 25 dols. or 30 dols. per horse-power, and it may rise to 150 dols. or 200 dols. Taking the general average of powers in regions where they have not yet acquired an artificial value by proximity to towns, one may say, without being widely astray, that 75 dols. per horse-power will cover the necessary expense. With a considerable head this figure will be somewhat reduced.

For a rough estimate of the hydraulic cost in the case in hand, we shall be fairly near the mark in doubling the cost of the electrical part of the equipment, making 160,000 dols. as the total investment in the power plant for furnishing 1,000 horse-power day and night. A brief expense estimate will show how important a saving can be effected by this utilisation of electric power.

This figure of 160,000 dols. is certainly conservative enough, since I have in mind one plant with a generating station of 1,000 horse-power, which was installed complete, including distribution lines to the amount of 15,000 dols., but no motors, for less than 125,000 dols., and this at a time when electrical machinery was considerably more costly than at present.

Now, as to operating expense the figures are not difficult to secure. In the first place we will allow for interest on the investment at 6 per cent., and will charge annually 4 per cent. to the credit of a sinking fund, for depreciation or replacement. Then we will add 2 per cent. for insurance and taxes —certainly an ample allowance. The total annual charge due to these items then becomes 21,600 dols. We can then make up the regular operating charges about as follows:—Labour, eight men and team, 6,500 dols.: supplies and general maintenance, 5,000 dols. These figures are more than ample for any ordinary case. Summing them, we arrive at 33,100 dols. as the total annual cost of 1,000 horse-power for twenty-four hours per day, which brings the charge per horse-power year down to 33.10 dols. This power generated by steam, with coal at, say, 3 dols. per ton, using the non-condensing engines too often employed, would cost at least double the amount mentioned, and even with a first-class steam plant the cost would fall little, if any, below 50 dols. per year. In other words, the net yearly saving by employing electrical transmission in such a case as we have assumed amounts to from 15,000 dols. to 30,000 dols. per year. And this figure could often be exceeded under the conditions actually existing in paper mill work.

Another interesting branch of our inquiry is the advantage to be gained by distributing power to the various parts of the mill by motors, instead of by the usual long lines of shafting. Whatever the motive power, it is quite usual to drive the coarse machinery, grinders, beating engines, etc., where these are used, independently of the paper machinery proper, which requires a very uniform speed to get the best results. When hydraulic power can be used directly in so simple a drive as is usual in paper mills, there is no object in using motors. If the plant is steam-driven, the advantage gained by concentrating the power plant will very seldom be enough to compensate for the losses incurred in electrical driving. In many manufacturing industries, where power has to be considerably subdivided and distributed over a considerable area, the losses of power in shafting and belts are so considerable, often 50 per cent. or more, that electrical driving becomes highly advantageous. When these losses fall to 25 per cent. or so, the margin of economy in favour of electrical working becomes very small, and I am inclined to think that even in the big Fourdrinier machines, something like 50 yards in length, the avoidable losses in shafting are little, if any, larger than the figures just mentioned. If by electrical driving one could avoid all the shafting and gearing losses, and drive the working parts of the machine with some directness, the case might be different. But the parts of a Fourdrinier machine are so inter-related that really independent driving is practically out of the question. In the first place, the surface speed must be variable over a wide range, to accommodate various kinds and grades of paper, and the speed must be very steady, independent of load, to avoid trouble if the sheet breaks — not a rare occurrence. These requirements can be successfully met with motors, but in addition to these each part of the machine — wires, press rolls, dryer rolls, calenders, and reels— generally requires a slightly different speed, to take up stretching of the sheet under pressure and drying. Further, while for any one kind of stock the ratios of these speeds to each other are constant, they vary for each new kind of stock to a small, but very important, degree. And these ratios must be preserved at any particular time with an exactness which can hardly be paralleled in the industrial arts.

For instance, the surface speeds of two consecutive press rolls must be made to vary by, perhaps a fifth of 1 per cent., and once established, this speed ratio must remain literally constant so long as the rolls are running. I do not think it is feasible to secure exactness in these minute variations by any method of motor regulation yet devised. It would be hard to imagine anything better adapted for the purpose than the cone pulleys now used.

Hence in the event of driving a paper mill by electrically-transmitted power, the motive power cannot be advantageously subdivided into very small units. It is practicable, however, to save some waste power by abolishing all long shafts and working every part of the apparatus by comparatively simple drives. Thus, in an ordinary news paper mill, one could with advantage work by separate motors the wood-preparing machinery with its conveyors, the grinders and the beating engines. Then, in the Fourdrinier machine it might be worth while to split up the power somewhat, to avoid long lines of shafting, without dispensing with existing methods of varying the speed of the parts. For in-

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stance, all of the machine up to the press rolls could well be driven by a single motor, the press rolls by another, the dryers by a third, the calenders by still another, and the reels by a fifth. In driving a whole plant electrically some such subdivision could undoubtedly be made to economise power enough to be worth the while, perhaps to the amount of 10 per cent., which is worth saving even when power is cheap. But anything like a minute subdivision of power would be both inconvenient and unprofitable, and I do not think the saving is enough to justify the use of an electrical system for distributing the power except in connection with a transmission plant. It is quite as important to know when to let well enough alone as to have a prophetic instinct for improvements.

The question of electric heat for the drying rolls, and generally for freeing the pulp from water, has been several times broached to me recently. It is only fair to say right now to those interested that the amount of power required to furnish heat for drying the daily product of a modern paper mill is enough to stagger the wildest-eyed and longest-haired electrical crank who ever claimed that electricity was in its infancy. That drying by steam is expensive is painfully evident to anyone in the business, but if you are minded to seek for improvements do not take up electrical heating until you have exhausted the possibilities of producer gas.

To sum up, the best field for the use of electric motors in paper manufacture is in reducing the cost of power, by utilising the now well-tried methods of power transmission. By this means a mill can be located so as to obtain its material and ship its product economically, without foregoing the advantages of cheap water-power. With the transmitted energy at hand, power can be economised by the skilful use of motors in its distribution. There is no cut and dried rule or formula by which the best equipment can be at once determined. Each case has to be considered on its merits, and by the light of common sense, for in the last resort the best equipment is the one which enables you to turn out a given grade of paper at the lowest price.

PETER SPENCE & SONS,
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MANUFACTURERS OF
Pure CRYSTAL ALUM
High-Class Sulphate of Alumina,
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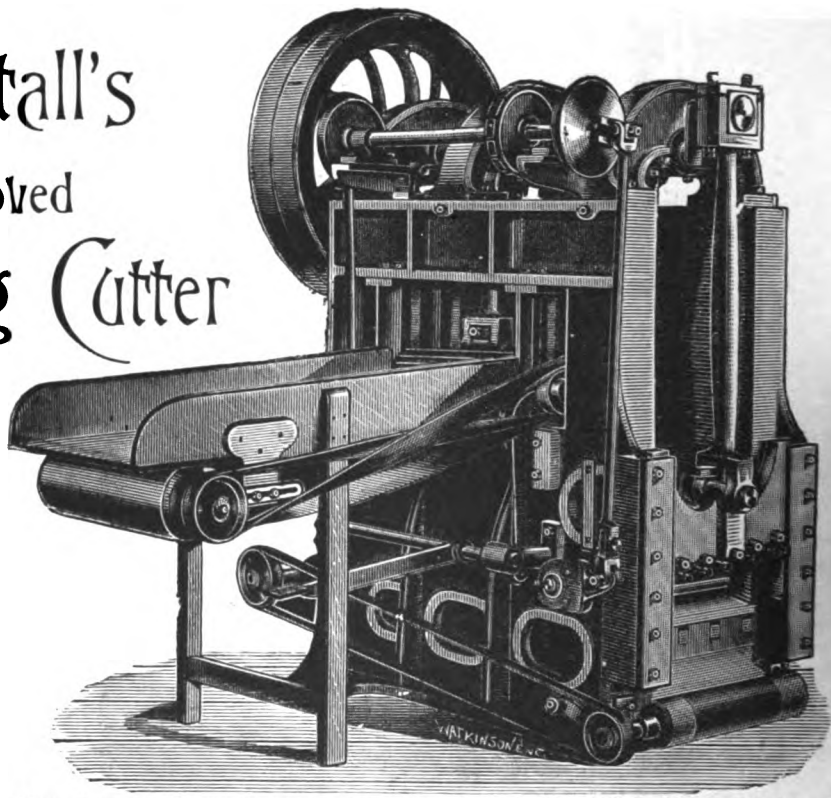

This Machine has now been Greatly Strengthened and Simplified, and its Output Capacity Increased. It is Equally Effective upon the Strongest and Lightest Materials, and will Cut Every Class of Stock.

Sole British Makers of th

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JACKSON
LIMITED.

ngineers,
ANCHESTER.

Marshall's Patent Perfecting Engine

uitable for all
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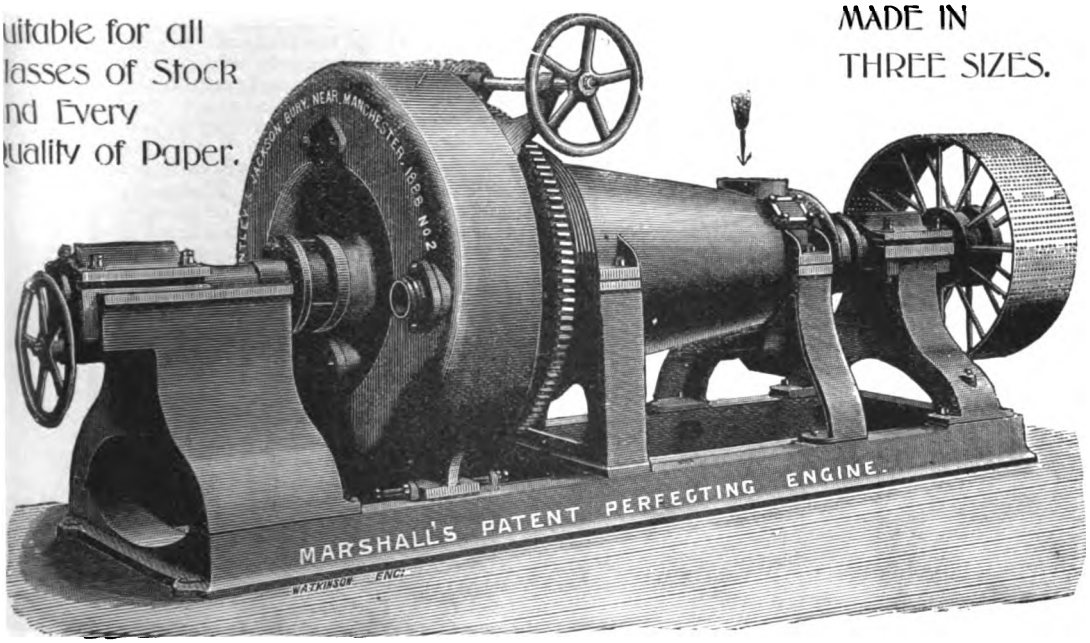
MADE IN
THREE SIZES.



This Engine will produce a Better Finished, Stronger, and More Even Sheet of Paper from the same Materials than can be produced by any other Mechanical Process, and at the same time will REDUCE the TIME and POWER Required for Beating.

COBURN - TAYLOR Machine.

ILL SHOULD BE WITHOUT.

ON APPLICATION.

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American Paper and Pulp Association

ANNUAL MEETING AND BANQUET.

The twentieth annual meeting of the American Paper and Pulp Association, held recently at New York, was a very successful affair. The session occupied two days, and there was a large attendance.

Mr. HUGH J. CHISHOLM, the president, submitted a report in which he stated there was a steady increase going on in export business. Paper and pulp were being exported at the rate of five million dollars annually. The exports of paper for the eleven months ending November, 1806, were of the value of 2,500,000 dollars, and for the eleven months ending November, 1897, 4,000,000 dollars, an increase of 56 per cent. The exports of pulp were admitted to be comparatively small, but the future was one of promise. The present rate of export was probably about 400,000 dollars a year. Comparing foreign business with that of other countries he mentioned that Great Britain, France, and Germany went outside of their borders in 1896 for nearly 25,000,000 dollars worth of paper, ten times as much as the Americans sold. In the matter of paper England alone imported in 1896 12,400,000 dollars worth. The president stated that the exports of Great Britain, France, and Germany in 1896 amounted to 36,000,000 dollars; Germany alone exporting over 18,000,000 dollars worth, and the Americans ought to make it their business to find out where the paper went. Norway and Sweden exported in 1896 nearly 500,000 tons of pulp, perhaps 5,500,000 dollars worth. The Americans had to consider what powerful competitors Norway and Sweden will become when, instead of exporting this pulp, they convert it into paper with modern papermaking machinery, as they were already beginning to do, and then place the paper upon the market by methods remarkably cheap and peculiarly their own. The president referred to the wonderfully natural facilities they found in the United States for papermaking. They had an abundant supply of cheap water power and wood, and considering the advantages accruing from the conservation of many interests they had every reason to expect to be able in the future to sell cheaper than any other nation.

Mr. C. W. LYMAN, the secretary and treasurer, stated that the membership a year ago was 182, and this year it had increased to 247. The balance in the treasury a year ago was 848.61 dollars; after meeting the expenses of the past year there was a balance of 1,263.53 dollars.

Mr. MOHR, in referring to the book division, said there had been a perceptible increase in the foreign demand during the year. Hitherto they had supplied a few foreign countries, but now the call for American book papers had become quite general.

Mr. G. E. SHERMAN reported on the news trade. Intense competition prevailed during the first half of the year. An improvement subsequently set in. No reference was made to exports, but the recent organisation of the International Paper Co. was mentioned, which Mr. Sherman regarded as a private enterprise.

COL. S. P. TRAIN reported for the manilla and wrapping paper section of the trade. He said prices were brought to a low ebb, but a short while ago manufacturers made an effort to change the depressed condition of the market by advancing prices a little, which had had a beneficial effect. Mills were busy, and accumulated stocks had been greatly reduced.

Mr. K. B. FULLERTON touched upon the ground wood pulp market during the last twelve months. He said the paper trade in the United States in the early part of the year was depressed, and therefore measures were quickly taken to increase the small export business then existing. The export trade had been sufficient to keep mills favourably located running at full capacity. The outlook for the future did not seem to be very bright, for the reason that mills using pulp were arranging in many cases to make their own. Without doubt, some mills that used a limited quantity would always remain buyers of ground wood pulp, but he thought the sale of the article would not be as great in the future as in the past to home consumers. Pulp makers would have to depend to a certain extent upon export business to keep their mills busy, and he thought that those properly situated for such business would be able to compete successfully in the British market with any other country making ground wood pulp.

Mr. A. G. PAINE reported upon the chemical fibre industry. Referring first to soda pulp, he said the extremely low prices which had so long prevailed, owing to overproduction, had resulted in a largely increased consumption in this article. There was a good demand from France and England for American soda pulps. Lately there had been a slight advance, but he regarded the business as unremunerative, although there was reason to believe that in the near future it would be a on better basis. In reference to sulphite pulp, production had been increased. The total daily output on December 31st, 1896, was 1,029 tons, and on December 31st, 1897, 1,219 tons, showing an increase of 190 tons per working day. The business during the past year had on the whole been profitable. Efforts in the direction of exporting sulphite would have been more successful and remunerative had manufacturers arranged to dry pulp before shipping, thereby saving over half the carrying charges. Of late some mills had been equipped with drying apparatus, which would enable the owners to market their pulp abroad at a slight profit, and it was possible for them to become formidable competitors of the Scandinavian and German mills for the trade of Great Britain. The improvement in the home manufacture had

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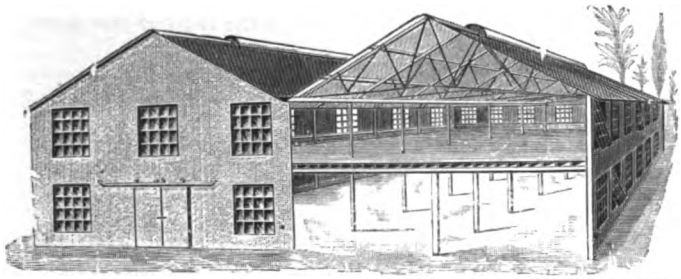
caused a further reduction in imports, the total quantity received in 1897 being 3,500 tons. During the latter part of the last year the demand for sulphite increased, and it is hoped that figures will be obtained which will leave a fair return upon the capital employed.

Mr. WILLIAM WHITING stated that, in regard to the writing paper market, the volume of business had been gradually increasing, and now there was a fair demand for all grades. Over-production still existed, and there was considerable competition between the lower grades of writing and the higher grades of engine-sized papers.

A feature of the gathering was the reading of a number of papers dealing with "Electricity in Papermaking," "The Economical Use of Steam in the Manufacture of Paper," "Forestry and Wood Pulp Supplies," "How to Apply Forestry to Spruce Lands," "The Sustained Yield of Spruce Lands," and "Some Facts in Hydraulics."

The proceedings terminated on the second day with a banquet, at which some excellent speeches were delivered.

IRON ROOFS AND BUILDINGS,



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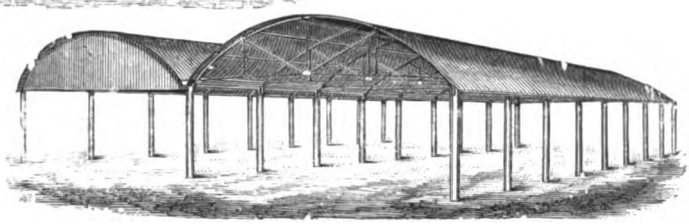

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2847

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Marbling Paper, etc.

It is generally known that when albuminates or resin or fat-soaps are mixed with suitable chemicals such as alum, sulphate of alumina, acids and the like, flocculent deposits are produced. When the above-mentioned albuminates or soaps are coloured before being mixed with the depositing reagents, the deposits attract the colouring matter (*in statu nascendi*) with the compounds formed, and the colours are thereby deposited with great intensity.

With the help of the colouring precipitations paper can be marbled, mottled or coloured, according as the sprayings are transferred regularly or irregularly over the whole surface or part thereof to the one side of the paper, by means of a suitable apparatus consisting of felt rollers, spray device and colour box, arranged at a suitable place upon the machine, a sufficient drying being provided for.

The composition of the colouring material used can vary. For example, one litre of milk coloured with $\frac{1}{10}$ gr. aniline blue and afterwards precipitated with 150 gr. of sulphate of alumina.

The practical carrying out of the marbling or colouring of the paper can, for example, be effected as follows:—

1. Between the second and third drying cylinders of the paper machine there may be inserted a colour box with a rotating colour roller, which latter rests upon the surface of the paper. An apparatus of this description is represented in Fig. 1 of the accompanying drawings. The colour roller A transfers colour from the colour box B to the surface of the paper C.

2. At the same place on the paper machine a colour box may be arranged filled with sponges so that the surface of the paper is continuously passed along in contact with these sponges which are fed with colour. Fig. 2 of the accompanying drawings represents the apparatus necessary for this form of the invention. The sponges D in the colour box B which are continuously impregnated, transfer the colour to the surface of the paper C passing thereover.

3. The colour may be converted into spray by means of a common sprinkling tube and allowed to fall direct upon the surface of the paper.

4. A damp felt may move over the rollers set forth under Clause 1 and thus take up the colour and transfer it to the surface of the paper under the press of the paper machine.

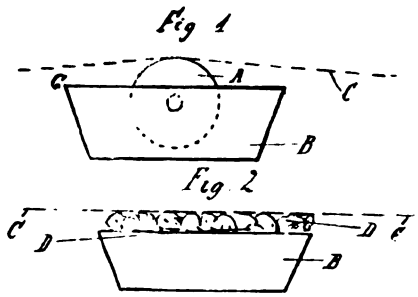
5. A colour box which is open on the one side may be pressed against the upper press roller, this roller will thus receive the colour from the colour box and transfer it to the paper passing beneath it. Fig. 3 of the accompanying drawings represents an arrangement used for the purpose. The colour passes from the feed-tube E into the colour box B, is carried on by the press-roller F and transferred to the paper C. The pressing of the paper against the roller F is effected by a second roller G with the help of the damp felt H.

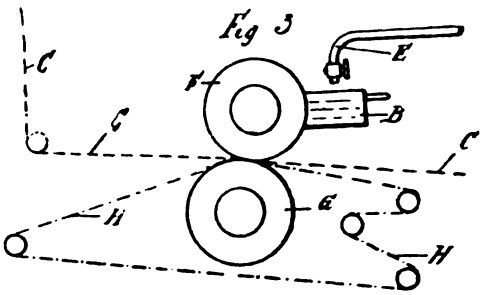
6. One of the guide-rollers of the paper machine may dip in the colour and transfer it to the surface of the paper.

7. Directly beneath the sieve of the paper machine a colour box may be arranged which transfers the liquid colour under pressure to the under side of the surface of the paper.

8. An egoutteur (drop apparatus) may receive the colouring matter by means of a common spray-tube and transfer it to the surface of the paper.

The process has been introduced by a German mill manager, Ernst Lehman, of Fockendorf, who has recently taken out a patent in this country.





W. A. BISHOP AND CO., LIMITED.—Registered with a nominal capital of £20,000 in £10 shares (1,000 five per cent. cumulative preference). Object, to acquire and carry on the business of manufacturers of borax, boracic acid, sulphate of soda, carbonate of lime, and other chemicals, carried on as W. A. Bishop and Co., at Warrington, Lancashire, and at 13, Idol-lane, E.C., and to enter into a certain agreement. The first directors are W. Bishop, T. H. Tyndale, and E. L. Fleming.

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In the Matter of the WEST LONDON PAPER MILL COMPANY, LIMITED, In Liquidation.

NOTICE is hereby given that the creditors of the above-named Company are required, on or before the 26th day of April, to send their names and addresses, and the particulars of their debts or claims, and the names and addresses of their solicitors, if any, to the undersigned Arthur Barnett Russell, of 11, Ludgate Hill, London, E.C., Chartered Accountant, the Liquidator of the said Company, and if so required, by notice in writing from the said Liquidator, are by their solicitors to come in and prove their said debts or claims at such time and place as shall be specified in such notice, or in default thereof they will be excluded from the benefit of any distribution made before such debts are proved.

Dated this 8th day of March, 1898.

ARTHUR B. RUSSELL,
Liquidator.

3119

PEMBROKESHIRE.

FOR SALE, BY PRIVATE TREATY,

THE LEASEHOLD PROPERTY,
known as

The Prendergast Paper Mills,

together with a

DWELLING HOUSE,

Garden and Out-premises, Orchard and Hayguard, also a Field adjoining containing 4 a. 1 r. 30. p., all held under a Lease for 21 years dated 20th August, 1894, at a Rent of £80 per annum free of tithe. The said Lease contains a clause enabling the Lessee to purchase the Freehold for the sum of £1,000.

The Mills contain all the requisite Machinery for Paper-making, and there is a plentiful supply of water from the River Cleddaw.

For further particulars and to treat apply to Messrs. T. Rule, Owen and Son, Estate Agents and Valuers, Haverfordwest; or to Messrs. Eaton, Evans and Williams, Solicitors, Haverfordwest. 3116

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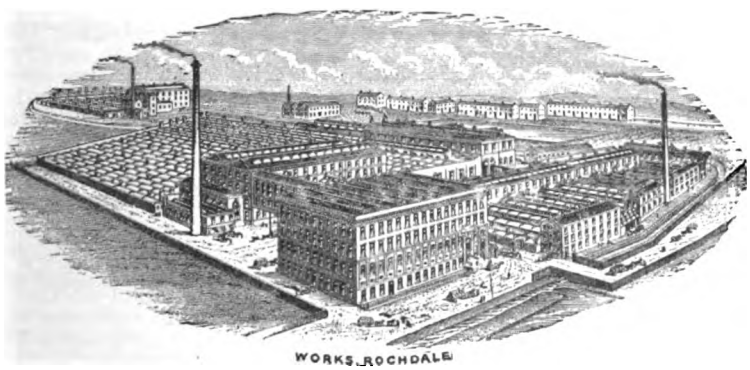

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

CULTER MILLS PAPER CO., LTD.—At the annual meeting in Aberdeen of the shareholders in this company, the report, recommending a dividend of 12½ per cent., was unanimously adopted.

GUARDBRIDGE PAPER COMPANY, LTD.—Registered with a capital of £240.000, in £5 shares. Object, to acquire as a going concern the business of paper manufacturers at present conducted by a company with similar title, and to carry on the same. The signatories are:—H. V. Haig, Ramornie; J. Galloway, Seggie; J. Anderson, Norton Leven; F. T. Wallace, Leven; A. Hutchinson, Kirkcaldy; J. Hodge, Guardbridge; J. Greenhill, 50, Constitution-street, Leith.

MR. W. J. T. MUNRO, who has been manager of the Bally Paper Mills, Calcutta, for the last four years, has come home, and does not intend to return to India. While manager of the Bally Paper Mills, Mr. Munro made a trip round the Australasian Colonies with a view of introducing the manufactures of the Bally Mills, and we believe he met with considerable success.

DEATH OF MR. FERDINAND HURTER.—A gentleman who had earned a widespread reputation as a chemist has passed away in the person of Mr. Ferdinand Hurter, Ph.D., of Cressington, who died suddenly on Saturday, in his 54th year. He was known throughout Europe for his scientific attainments, and was regarded as an authority on analysis. He was one of those who, many years ago, founded the extensive chemical trade of Widnes, and devoted much attention to the alkali industry. About the year 1889 he became a member of the United Alkali Company, Limited. Mr. Hurter was well known and respected among members of learned societies.

EMPLOYERS' LIABILITY.—The liability of an employer to compensate a workman for injuries sustained in his employment by the negligence of another person in the same employment is limited, under the Employers' Liability Act, 1880, to bases where the default is on the part of any person who is in a position of trust or in a position superior to that of the injured man. The Common Employment Abolition Bill, introduced by Sir Arthur Forwood, in conjunction with Mr. Burt, Mr. Warr, Mr. Butcher, Sir Albert Rollitt, and Mr. Royds, proposes to extend the liability to all cases arising from negligence by a fellow-servant, whatever may be his *status* in the employment. The measure does not apply to any of the occupations dealt with by the Workmen's Compensation Act of last Session, but it permits employers whose trade is not included in that statute to engage their workmen subject to its terms.

MESSRS. THOS. OWEN & CO., LTD., of Ely Paper Mills, Cardiff, have opened offices at 13, New Bridge-street London, E.C.

AT the annual dinner of the Salt Chamber of Commerce held at Northwich, Dr. Ludwig Mond was presented with a beautiful silver casket and address, in recognition of his gift to the nation of the Davy-Faraday Institution, which was opened by the Prince of Wales. The casket was set with precious stones, with the recipient's name, and the German motto "Licht, mehr Licht."

SCALDING FATALITY AT SHOTLEY BRIDGE.—On Sunday morning, Michael Fitzpatrick, aged about 13 years, died from the effects of scalds accidentally received while following his employment at Messrs. John Annandale and Sons' Paper Mills, Shotley-bridge. It seems that young Fitzpatrick fell into a vat of boiling liquid, on Saturday morning, and he received such injuries that he expired within 24 hours. When he was brought out of the vat, the poor fellow was dreadfully scalded on the lower portion of the body.

RIVERS POLLUTION PREVENTION BILL.—The principal object of Sir Francis Powell's Rivers Pollution Prevention Bill is to improve the law for preventing the pollution of streams by extending to county councils, joint committees, and river boards in England the main provisions of the Mersey and Irwell Act of 1892, and the West Riding of Yorks Rivers Act of 1894. The Bill also contains new provisoes—(1) preventing the pollution of streams by canals; (2) qualifying justices to act, though they are ratepayers; (3) empowering local authorities to contribute to the expenses of prosecutions by other authorities; (4) empowering the Local Government Board to order in certain cases the rating of areas specially benefited; and (5) enabling defendants to be witnesses in certain cases.

THE EXPORTS OF PAPER at New York, according to the latest weekly list, included the following:—To London, 3,347 packages and 168 bundles; Liverpool, 23 cases and 800 bundles; Manchester, 671 bundles and 398 packages; Newcastle, 174 packages; Southampton, 76 packages; Hull, 22 packages; and Bristol, 236 packages. The shipments to Hamburg were 6 bundles; Bremerhaven, 10 cases; Argentine, 3 cases; Australia, 2 cases; B. Africa. 20 packages; Brazil, 244 packages; B. W. Indies, 604 packages; D. W. Indies, 18 packages; Japan, 3,708 packages; and Mexico, 38 packages.

WE have received a copy of the 1898 edition of the "Directory of Papermakers" of the United Kingdom, published by Messrs. Marchant, Singer and Co. It is a well arranged publication, giving an alphabetical list of manufacturers, also of the mills, together with a variety of useful information. Great care evidently is taken in the compilation of work, into which has been introduced this year several new features, for instance, a list of sizes of paper and 200 more trade designations, bringing the total up to over 1,900.

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Pure Alkali *Guaranteed* **58** *Degrees, containing* **99** *per cent. of Carbonate of Soda. It is Specially Adapted for the MANUFACTURE OF PAPER, Colours, Dyes, Soap, and Glass.*

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

WOOD PULP was imported into Great Britain last month to the extent of 27,982 tons, of the value of £133,616. An increase is shown compared with the corresponding month of last year, when the quantity was 24,629 tons, of the value of £121,831.

NOTWITHSTANDING the above increase there was a marked falling off in arrivals from Norway. The quantity last month was 15,977 tons, of the value of £63,969, whereas for February, 1897, the quantity was 19,784 tons, of the value of £78,995.

THERE was a big increase in the receipts of wood pulp from other countries. Last month's figures were 12,005 tons, of the value of £69,647, and for the corresponding month of last year 4,845 tons, of the value of £42,836.

CHEMICAL wood pulp was received from Norway last month to the extent of 4,411 tons, and from other countries 5,537 tons, the respective values being £35,189 and £44,121.

MECHANICAL wood pulp was imported last month from Norway to the extent of 11,566 tons, of the value of £28,780, and from other countries 6,468 tons, of the value of £25,526.

DURING the first two months of the present year 60,183 tons of wood pulp were imported, the value being £290,674. There is a decrease compared with Jan.-Feb., 1897, when the quantity was 62,664 tons, of the value of £301,494.

BRITISH imports of chemical wood pulp during Jan.-Feb. amount to 22,197 tons, of the value of £163,158; Norway supplied 12,096 tons, of the value of £83,742, and other countries 10,101 tons, of the value of £79,416.

MECHANICAL wood pulp was received at British ports during the first two months of this year to the amount of 37,986 tons, of the value of £127,516; Norway contributed 23,686 tons, of the value of £61,254, and the remainder, 14,300 tons of the value of £66,162, was supplied by other countries.

Since our last return of the arrivals of wood pulp at Manchester the Borregaard s. has discharged 2,238 bales from Sarpsborg, 448 bales (dry) from Sannesund, and 1,000 bales from Fredrikshald.

THE outlook for producers of mechanical wood pulp in the United States is not a very bright one. Mr. Fullerton, one of the vice-presidents of the American Paper and Pulp Association, stated at a recent meeting that mills using pulp were arranging in many cases to make their own.

MR. FULLERTON also stated that American pulp makers must depend to a certain extent upon export business to keep their mills busy, and he believed that works properly situated for such business would be able to compete successfully in the British market with any other country making ground wood.

A LARGE shipping business in American wood pulp is being cultivated by the Missisquoi Pulp Company, Sheldon Springs, Vt.

THE Manufacturing Investment Co., of Madison, Me., is another American concern that is working up a business in wood pulp with this country. A consignment, to demonstrate the value of the pulp, has lately been dispatched to Newcastle and Leith.

THE Marinette and Menominee Paper Company have decided to put up a mill at Marinette, Wis., to cost 50,000 dols., in place of the sulphite plant recently destroyed by fire. The capacity of the plant will be from twenty-five to thirty tons daily.

CONCERNING wood pulp works in Canada, Messrs. E. Goff Penny, Robert Archer, Wm. Strachan, Wm. Currie and Robert Law, give notice in the Quebec *Official Gazette* that they will apply for incorporation under the name of the Jacques Cartier Pulp and Paper Company, with a capital stock of fifty thousand dollars.

MESSRS. WILLIAM CURRIE, F. P. Currie, M. S. Foley, J. T. Shearer, Robert Law, the Hon. Judge Alderic Ouimet, John Livingstone, and W. G. Reid, also apply for incorporation under the name of the Dufferin Falls Lumber Pulp and Paper Company, Limited, of Montreal, with a capital stock of three hundred thousand dollars.

THE Victoria and New Brunswick Pulp Co., of Woodstock, N.B., propose building a dam at the Tobique Narrows and erecting a pulp mill.

MR. MCDONALD, of Montreal, will probably erect a pulp mill at St. Joseph d'Alma, utilising the water power owned by Narcisse Gariepy, of Bay St. Paul.

IMPORTANT TO WOOD PULP AND OTHER ADVERTISERS.

"THE WORLD'S PAPER TRADE REVIEW . . . . . wide[ly] circulated . . . both in this country and abroad."—MUNNS AND LONGDEN, solicitors to the BRITISH WOOD PULP ASSOCIATION.

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CHRISTIANIA, NORGE, Dronningens Gade 13.

TELEGRAFADR: HART, CHRISTIANIA. TELEFON: 72. RIGSTEL: 85.

Aktiebolaget G. HARTMANN'S Maskinaffär,

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PETER SPENCE & SONS, Manchester.
Alunkakor för Pappersfabriker.

JENSEN & GLAD, Köpenhamn.
Bornholms Kaolinlera.

NILS AALL, Ulefos, Skien.
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Transmissionslinor af Hampa med regulerbar Linläg.

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PETER SPENCE & SONS, Manchester.
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SCHÄFFER & BUDENBERG, Buckau-Magdeburg.
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REINICKE & JASPER, Cothen.
Knotenfangere, roterende og plane.

G. GROLMAN Dusseldorf.
China Clay.

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(BARKCLEANING CYLINDERS FOR PULPWOOD).

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Böhnsdalens Trämassefabrik	6
Embretsfos Sulfitfabrik ..	4
Hunsfos Fabriker	2
Tornator Trämassefabrik...	2
Hafslund Trämassefabrik..	1
Treschow-Fritzöes Fabrik	1
Sörfors Trämassefabrik ...	1
Lövenskiold Fossum ...	2
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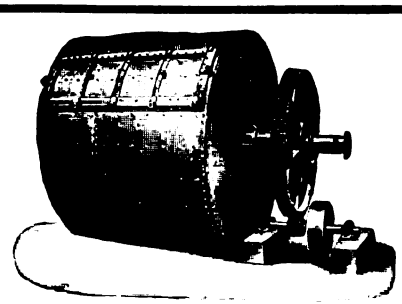
Union Co.	2
Ranheim Fabrik	1



Foreign Applications Attended to by:

Great Britain and Ireland:
Messrs. CHRISTOPHERSEN, ANDREWS & Co., 91, Queen Victoria Street, London, E.C.

United States:
Messrs. FREDERICK BERTUCH & Co., Temple Court Building, Room 308-10, New York.

Belgique & France:
Messrs. LAMMLETH & CORNET, Anvers.

Deutschland und Oesterreich:
H. FÜLLNER, Warmbrunn, Schlesien.

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West London Paper Mill.

Lot's-road, Chelsea, is not exactly the spot where one would expect to find a paper mill. But then the West London Paper Mill was started under peculiar conditions, and in selecting Chelsea the works were in the centre of the raw material supply, and on the banks of the River Thames. At this mill it was sought to demonstrate in a practical manner that paper could be produced from the refuse of the dustbin, but judging from the brief existence of the concern, the efforts have resulted in failure.

On Tuesday last, the firm of Messrs. Fuller, Horsey, Sons and Cassell, the well-known auctioneers, submitted for sale the leasehold premises, plant, etc., under the hammer. The auctioneer, with a smile on his face, described the plant as being "extraordinary, valuable, and wonderful." He first submitted the lease, which had thirty years to run, producing £230 per annum. The bidding reached £950 and was withdrawn, but we believe it was sold later by private treaty.

Whilst the lots of papermaking plant and machinery were being submitted, several papermakers and engineers attended, viz., Messrs. A. E. Reed, Mardon, Anderson, H. Rogers, Sanguinette, W. W. De Buriatte, etc. Machinery dealers were in strong evidence.

The bidding was not very spirited. The sum of £155 was reached for an 82-in. papermaking machine, which included Lots 66 to 73. The auctioneer, therefore, decided to offer the machine, etc., in separate lots. Lot 66, a strainer with gun metal knotter plates, 72 by 24 inches, £5 10s.; Lot 67, wet end of machine, etc., £28; Lot 68, six cast iron drying cylinders, by Bentley and Jackson, £58 (purchaser, Mr. A. E. Reed); Lot 69, pair of intermediate press rolls, £4 10s.; Lot 70, three cast iron drying cylinders, by Bentley and Jackson, £27; Lot 71, stack of four high glazing rolls, £14; Lot 72, an 80-in. slitting machine, £3; Lot 73, reeling machine, £1 5s.; The total amount realised for the various parts of the machine was £141 5s., being—perhaps rather unusual—lower than the original bid of £155.

Amongst the various prices realised may be mentioned a revolving rag chopping machine, £10; rag dusting machine, £4 10s.; a revolving dusting machine, £10; circular wrought iron revolving conveyor, £2; kollergang, £10 10s.; an elevator, 40-ft. high, £19; horizontal washing machine, £17; a No. 6 Pulsometer pump, £16; a 3 in. Gwynne's patent "Invincible" centrifugal pump, £3 5s.; conical revolving stuff strainer, £4; elevator, 35-ft. high, £8; egg-ended horizontal revolving rag boiler, £13; a cylindrical rag boiler, £23; cast iron washing engine, £7 10s.; cast iron beating engine, £13; a 7-in. single-acting plunger stuff pump, £13; high-pressure horizontal steam engine, £10; 78-in. slitting and sheet-cutting machine, £19; a 5-ton Avery's cart weighbridge, £5; hydraulic press, £5 5s.; compound elephant and multitubular steam boiler, 5-ft. 6-in. diameter, 10-ft. long, £48: two other boilers, £50 and £84 respectively; a cylindrical tubular boiler, £9 10s.; "Worthington's" duplex steam pump, £17; another of "Worthington's" pumps realised £18; Floyd and Streets' patent vertical steam pump, by Tangye, £17; horizontal tandem compound condensing expansive steam engine, £205; 54-in. exhaust fan, £95; Tangye's high-speed inverted cylinder vertical engine, £12.

British Imports of Wood Pulp.

Last month 9,948 tons of chemical wood pulp were imported into Great Britain, the value being £79,310. Of this quantity Norway supplied 4,411 tons of the value of £35,189, and other countries 5,537 tons of the value of £44,121.

Mechanical wood pulp was imported to the extent of 18,034 tons of the value of £54,306. Norway supplied 11,566 tons of the value of £28,780, and other countries 6,468 tons of the value of £25,526.

The following are the total imports for last month, and also for Jan.-Feb. of this and the two preceding years;—

TOTAL IMPORTS.

February,	1898	27,982 tons	£133,616
,,	1897	24,629 ,,	121,831
,,	1896	25,326 ,,	130,049
Jan.-Feb.,	1895	60,183 tons	£290,674
,,	1897	62,664 ,,	301,494
,,	1896	46,496 ,,	245,806

The following figures show the total receipts from Norway and also from other countries:

FROM NORWAY.

February,	1898	15,977 tons	£63,969
,,	1897	19,784 ,,	78,995
,,	1896	19,257 ,,	86,975
Jan.-Feb.,	1898	35,782 tons	£145,096
,,	1897	47,326 ,,	185,465
,,	1896	34,906 ,,	161,044

FROM OTHER COUNTRIES.

February,	1898	12,005 tons	£69,647
,,	1897	4,845 ,,	42,836
,,	1896	6,069 ,,	43,074
Jan.-Feb.,	1898	24,401 tons	£145,578
,,	1897	15,338 ,,	116,029
,,	1896	11,590 ,,	84,762

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British Imports of Esparto.

The imports of esparto last month compare favourably with the corresponding month of last year, and the two month's receipts show a comparative increase. The arrivals were as under;—

February	1898	20,890 tons	£81,012
,,	1897	19,001 ,,	83,850
,,	1896	26,249 ,,	110,937
Jan.-Feb.,	1898	39,268 tons	£153,589
,,	1897	38,272 ,,	162,615
,,	1896	40,730 ,,	174,167

The arrivals from Algeria during February amounted to 9,190 tons of the value of £33,263, compared with 9,350 tons of the value of £35,882 for the corresponding month of last year. The two month's imports amounted to 17,090 tons of the value of £60,820, against 14,002 tons and £53,495.

Spanish esparto was received last month to the extent of 5,888 tons of the value of £28,231, against 6,913 tons of the value of £32,973. The two months' arrivals were 10,961 tons of the value of £56,355, compared with 14,217 tons of the value of £69,556.

Supplies from other countries last month were 6,112 tons of the value of £19,518, against 2,738 tons of the value of £14,995. For the two months 11,217 tons were received of the value of £36,414, compared with 10,053 tons and £39,564.

British Imports & Exports of Rags.

The importation of rags during Jan.-Feb. show a falling off compared with the corresponding period of last year. The following are the figures:—

IMPORTS.

February,	1898	1,604 tons	£3,415
,,	1897	1,789 ,,	4,617
,,	1896	1,708 ,,	3,456
Jan.-Feb.	1898	15,780 ,,	£32,557
,,	1897	18,925 ,,	45,782
,,	1896	16,604 ,,	34,480

An improvement is shown in the exports of rags, the shipments last month being particularly good. The following are the totals:—

EXPORTS.

February,	1898	4,582 tons	£8,585
,,	1897	2,681 ,,	7,389
,,	1896	4,479 ,,	8,748
Jan.-Feb.	1898	21,486 ,,	£39,494
,,	1897	15,135 ,,	37,641
,,	1896	23,836 ,,	49,503

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
A B	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D	71	28	770	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z	210	82½	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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A Weekly Journal for Paper Makers & Engineers

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Printed and Published EVERY FRIDAY

By W. JOHN STONHILL.

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Subscription £1 per annum, Post Free.

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MR. RICHARD KERSHAW,
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FRIDAY, MARCH 11, 1898.

Foreign Paper in Great Britain.

THE consumption of foreign paper in Great Britain is enormous, and the growth in the demand is proceeding at an alarming rate. The total imports for February reached 360,673 cwts., of the value of £271,140, whereas the figures for the corresponding period of last year were 259,003 cwts., of the value of £213,842. The imports of unprinted paper last month reached 240,679 cwts., of the value of £204,139, an increase of 56,467 cwts. and £38,696 compared with February last year. The imports of printed paper reached 8,988 cwts., of the value of £28,112, an increase of 2,202 cwts. and £6,008. Strawboards, millboards, and wood pulp boards were received to the extent of 111,006 cwts., of the value of £38,889, showing an increase of 42,911 cwts., and in value £12,594.

* * *

Countries Supplying the British Market.

IN the official returns the only countries specified as sending paper to Great Britain are Sweden, Germany, Holland and Belgium. Under the heading of "other countries," however, the figures have now assumed large dimensions, as may be gathered when we state that during January and February of 1896 the imports of unprinted paper were 105,668 cwts. from "other countries," whilst for the corresponding two months of this year the quantity is 245,917 cwts. Probably the increase is due to larger shipments from the United States. During the two months of this year the total quantity of paper imported amounts to 795,090 cwts. of the value of £578,867, a considerable advance compared with the first two months of last year when the figures were 572,836 cwts. of the value of £460,948. The following are the comparative values of "unprinted" paper received from the undermentioned countries during Jan.-Feb. of this and the preceding year:—

	Jan.-Feb. 1897.	Jan.-Feb. 1898.	Increase or Decrease.
Sweden ...	£52,059	£59,290	+ £7,249
Germany ...	66,232	57,903	— 8,329
Holland ...	66,939	67,376	+ 437
Belgium ...	43,820	46,803	+ 2,983
Various ...	124,638	191,755	+ 67,117
Totals ...	£353,688	£423,127	+ £69,439

The value of printed paper imported during Jan.-Feb. stands at £57,018, against £51,354 last year, and strawboards, millboards, and wood pulp boards, £98,722 against £55,906.

* * *

Exports of British Paper.

WE are losing ground in the exportation of British paper. The total quantity last month was 76,160 cwts., of the value of £119,846, a decrease compared with February last year of 4,588 cwts., and in value £2,643. The export of writings, printings, and envelopes reached 51,102 cwts., of the value of £74,630, the figures for last year being 58,085 cwts. and £81,964. The shipments of other descriptions of paper (excluding hangings), amounted to 17,355 cwts., of the value of £23,362, an increase compared with February last year when the quantity was 14,920 cwts., of the value of £22,854.

* * *

The Two Months' Trade.

DURING the first two months of the present year there has been a falling off in the exportation of writings, printings and envelopes to Australasia, South Africa, and British North America. The total quantity of the goods mentioned exported to all countries was 100,713 cwts., of the value of £147,442, compared with 103,060 cwts. and £156,298 for corresponding months of last year. During January-February other descriptions of paper were exported to the extent of 35,199 cwt. of the value of £47,828, the figures for the corresponding period of last year being 36,147 cwts. and £50,215. The following are the comparative values of British paper (excluding hangings) exported to the countries mentioned for the first two months of this and the preceding year:—

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	Jan.-Feb., 1897.	Jan.-Feb., 1898.	Increase or Decrease.
France ...	£15,229	£15,574 +	£345
U.S.A. ...	10,151	7,118 —	3,033
B. S. Africa...	24,557	20,269 —	4,288
E. Indies ...	19,638	24,406 +	4,768
Australasia ...	81,192	72,539 —	8,653
B.N. America	5,308	4,365 —	943
Various ...	50,438	50,999 +	561
Totals	£206,513	£195,270 —	£11,243

The total quantity of British paper exported during Jan.-Feb. amounted to 150,976 cwts., of the value of £236,123, compared with 153,918 cwts. and £241,713 for the corresponding period of last year.

* * *

Papermakers' Raw Materials.

The value of the imports of papermakers' raw materials is not so high this year as during Jan.-Feb. of last year, as the following comparison shows :—

	Jan.-Feb. 1897.	Jan.-Feb. 1898.	Increase or Decrease.
Esparto... ...	£162,615	£153,589 —	£19,026
Wood pulp ...	301,494	290,674 —	10,820
Rags	45,782	32,557 —	13,225

The quantity of wood pulp imported during the last two months amounts to 60,183 tons, and last year to 62,664 tons; esparto, 39,268 tons against 38,272 tons; and rags, 3,415 tons against 4,617 tons.

* * *

Technical Education in Germany.

Technical high schools in Germany are becoming so crowded that the need of new ones is daily emphasised in the German Press. The pressure is so keenly felt at the Charlottenburg Polytechnic (which ranks as a university) that the Minister of Public Instruction, Dr. Bosse, has issued a notice in which the following sentence occurs :—"The machinery and engineering department of the Technical University here has become so overcrowded that it is impossible for all students to find places in the auditoriums and drawing class rooms. It is, therefore, absolutely necessary to restrict the entries to this department. I, therefore, direct that from April 1st next, and until further notice, no students or 'hospitanten' from foreign countries shall be accepted in the machinery and engineering section." This restriction will be severely felt, as the Charlottenburg Polytechnic has the reputation of being one of the finest technical schools in Europe.

Stocks and Shares.

Markets still keep very quiet, and little business is taking place, but prices do not show much signs of weakness, although a few falls are noticeable. East Lancashire still continue very firm, and the pref. have advanced another ¼, as also have the bonus; the ord. are unchanged. Bergvik debs. mark a rise of 2 points, and business has been done this week at 105. North of Ireland are recovering their set-back of a few weeks ago, and are ⅛ higher. A noticeable rise has also taken place in Peeble's debs. of 3. Star ord. have declined fractionally, but debs. are wanted.

In Chemical shares, Brunner, Monds are 1 point lower, and prefs. ⅛. United Alkali still are easier $\frac{1}{16}$, and the debs. 2 points, but the pref. remain firm at 8⅞. A further fall of 1s. is noted in Castner-Kellners. Others quiet.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
5	5	Hyde Paper Works Co.(Ld.)	nil	1⅛—2
10	10	Bath Paper Mill Co. ,,	5	11⅛—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	104—106
10	10	do. do. 6% pref.	6	12—13
3⅛	5	Burnley Paper Co. (Ld.)	10	6—6½
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref.	6	7⅛—7⅜
2⅞	3	Collin (Darwen) Paper ,,	nil	4/6—5/6
3⅜	5	Darwen Paper Co. ,,	15	7⅞—8⅛
10	10	E. Lancashire Paper Co. ,,	nil	6½—6⅝
10	10	do. do. 6% pref.	nil	6⅞—7⅛
5	5	do. do. bonus	nil	3⅛—3⅜
4	5	Hartlepool Pulp & Paper,,	10	7—7⅛ c.d.
2⅜	5	Kelln'r-Part'gt'n P'p Co,,	15	7⅞—8
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7—7⅛
7	10	Olive Brothers ,,	10	7½—7⅝
5	5	Peebles (A. M.) & Son ,,	8½	7⅞—8⅛
5	5	do. 5% cum. pref.	5	6½—6¾
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	6¾—7½ x.d.
1	1	do. do. cum. pref.	5	1⅛—1½ x.d.
4½	5	Roach Bridge Paper Co. ,,	10	5—5⅛
5	5	Star Paper Co.	10	7½—7⅝
3	5	do. do. cum. pref.	10	6—6¼
1	1	Thomas Owen & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2—2⅛
10	10	Waterlow & Sons non.-cum. def.	12	15⅛—15⅜
		do. do. non.-cum. pref.		14⅜—15¼
10	10	do. do. cum. pref.	3½	10¼—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7⅛	8⅛—8⅜
10	10	do. do. cum. pref.	7	11¼—11⅜
100	100	do. do. debs. (red. 1904)	6	104—100
10	10	Brunner, Mond & Co. (Ld.)	20	41⅛—41½
3½	10	do. do. "New" ,,	20	17—17⅛
10	10	do. do. 7% pref. ,,	7	17⅞—18
5	10	do. do. do. new issue	7	8¼—8⅜
1	1	Castner-Kellner Co. ,,	—	21/—22/-
5	5	Clayton Aniline cum. pref.	6	5⅜—6⅛
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅜—11⅝
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	1⅛—1⅛
10	10	do. do. cum. pref.,,	7	8⅛—9
100	Stock	do. mort. deb. (red. after '00)	5	109—110

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SWEDEN.

THE STORA KOPPARBERGS AKTIEBOLAG, near Stockholm, have ordered from an American engineering firm two Fourdrinier machines, one to be 107 inches wide and the other 127 inches wide.

AUSTRIA.

A MEETING was lately held in Vienna by the Austrian Patent Packing Papermakers (nature browns), to consider the present convention, which will come to an end in December, 1898. The results hitherto obtained were found so satisfactory that a prolongation of the convention for five years was resolved upon. A special committee was appointed to consider some few questions of detail, in order to make such alterations as may have become desirable.

GERMANY.

FLINT AND SURFACE PAPERS IN CENTRAL GERMANY.—It is reported that business in 1897 began very briskly, and that orders from America came in promptly, and had to be executed without delay in order to enjoy the old duties before the enforcement of the new McKinley Tariff. After that time, shipments to the States fell off. Relations with Great Britain were animated, but prices low. Prices of raw materials were easier, but wages higher. In consequence of a greater turnover, the total result was rather better than in the previous year.

FOREIGN NEWS AND ITS INFLUENCE ON PRICES OF GERMAN PAPER.—A German papermaker, writing to the *Papier Zeitung*, warns his colleagues not to be frightened by the reports copied into the German trade journals from foreign sources, particularly as regards the quality of the foreign wood papers. The principal argument used to bring down the German makers is that the wide and fast-going American news machines give special advantages to their owners, and that unless the same is done in Germany makers will not be able to compete. The only consequence of such talk is that even if only one house makes a cheaper offer, this is at once used for bringing down prices all round. Now as regards these wide and fast machines, they are in use in some German mills working for large English and German newspapers, but they can only pay the few makers who always make large quantities of one and the same size and weight. By far the bulk of the orders taken by German mills in the home trade is for small lots of constantly-changing sizes and weights. For these two or three small machines are more suitable than one large one, alterations on which are inconvenient. There is no chance that the foreign news can conquer the German home market. It cannot be denied that at times such offers may hamper the German export firms in their foreign sales, but they cannot possibly interfere in the German home market, whose great variety can only be properly attended to on the spot.

UNITED STATES.

INTERNATIONAL PAPER CO,—The directors have appointed the following additional officers:—F. H. Parks, of Glens Falls, N. Y., manager of the manufacturing department; Warren Curtis, of Palmer's Falls, N. Y., manager of the department of construction and maintenance; W. B. Dillon, manager of the sales department; W. D. Russell, of Turner's Falls, Mass., auditor.

THE NIAGARA PAPER MILLS are reported to be well supplied with orders for coloured papers for the British market.

AMERICAN "news" is being consigned to New Zealand in fairly large quantities by the Willamette Pulp and Paper Co., Oregon City, Ore.

LARGE orders from Australia and Japan are reported to have recently been received by the Everett Pulp and Paper Company, Everett, Wash.

IT is reported that a large sulphite fibre mill is to be erected at Mellen, Wis., for supplying the Shattuck and Babcock Paper Mills along the Fox River valley.

CANADA.

THE Tourville Lumber Mills Co. is said to be considering the establishment of a large pulp and paper mill at Louisville, Que. The Government has been asked to dredge three miles of the river to give the necessary water.

THE Shawenegan Manufacturing Co., of Shawenegan, Que., has been granted incorporation to manufacture pulp, paper, acetylene gas, etc., with a capital of 500,000 dols. Peter Lyall, contractor, of Montreal, and Charles Riordon, paper manufacturer, of St. Catharine's, are interested.

NEWFOUNDLAND.

THE material used by the new pulp mill of Harvey & Co., of St. John's, Newfoundland, is said to be a species of dwarf timber, principally spruce, which produces excellent pulp, but has very little value for any other purpose. The mill employs 200 hands, and is driven by the water paper of an immense flume.

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MANAGER Wanted, by one of the largest mills making News and Printings. The Directors are willing to give a good salary to a really competent and experienced man.—Apply by letter in the first instance, to Chairman, No. 7,227, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7227

WANTED, a thoroughly experienced MACHINEMAN to run fine named papers; a permanent job to a good man. State age and wage expected.—Address, No. 7,228, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7228

WANTED, a good steady BLACKSMITH for a Paper Mill; one that can do mechanic's work if required.—State age, wages, with references to Box 293, Post Office, Bradford, Yorks. 7229

Situations Wanted.

FOREMAN MILLWRIGHT wants situation in a paper mill or bleach works; 20 years' experience; can give good reference.—Address, No. 7,210, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7210

MANAGER.—An Experienced Manager will shortly be open to a Re engagement. Thoroughly practical and accustomed to entire control. Twenty years' experience in the manufacture of papers from esparto, rags, and wood pulp. Age 44. Active and energetic. Highest references to present and past employers.—Address, No. 7,142, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7142

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Apdress, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

Machinery.

WANTED, Rotary Card Cutting Machine; 14 pairs knives, complete, and in good condition.—Apply to Rowley Mills, Alvington, near Lydney. 7225

Miscellaneous.

A FIRM dealing with Papermakers are open for an additional First Class AGENCY.—Address, No. 7,223, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7223

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

PAPER MILL FOR SALE.—Brown Paper Mill in Scotland, 64 inch machine, steam and water power.—Particulars on application to No. 94, Keith & Co., Advertising Agents, Edinburgh. 7214

GERBLEIM

Prepared after Mitscherlich's Method.

A Size (partly Animal) far more advantageous than Rosin-Size, READY FOR IMMEDIATE USE IN PAPERMAKING, continually gaining greater extension in Germany.

For particulars write to—

MITSCHERLICH'S FABRIK,
HOF i/ BAVARIA.

British and Colonial Printer and Stationer

PUBLISHED EVERY THURSDAY

An Excellent Medium
For Papermakers to Keep
Their Makes Before Buyers.

SUBSCRIPTION: Inland, 10/- per Annum.
Foreign and Colonial 12/- per annum

W. JOHN STONHILL, 58, SHOE LANE, LONDON

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

4014	b	Delfzyl	Grangemth	80	b	Amsterdam	London
580	,,	Rotterdam	Liverpool	55	,,	Ghent	,,

CARDBOARDS.

90	b	Rouen	London

WOOD PULP BOARDS.

1499	b	Boston	Bristol	10	b	New York	London
66	c	,,	,,	17	,,	Gothenburg	Hull
115	b	Christiania	Grngmth	80	,,	Hambro	,,
1599	,,	New York	London	60	,,	Gothenburg	Mnchstr

PASTEBOARDS.

4174	b	Harlingen	Leith	10	b	Malmo	Grimsby
101	,,	Gothenburg	Granton	1	c	Rotterdam	Grngmth
186	,,	New York	London	11	b	Hango	Hull

MILLBOARDS.

9582	b	Harlingen	Hull

b—bales. c—cases. r—rolls. cr—crates.

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester, Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams.

Telegrams—"STONHILL, LONDON."

CHEMICALS.—There is very little change in the chemical market. Quotations for CAUSTIC SODA are well maintained, 77 per cent. being quoted at £8 12s. 6d., and 70% £7 to £7 2s. 6d. CAUSTIC BOTTOMS stand at £4 10s. to £4 15s. There is a fair demand for BLEACHING POWDER, soft wood being obtainable at £5 2s. 6d. to £5 5s. f.o.r. and hard wood £6 to £6 5s. f.o.b. Liverpool. SODA ASH is firm, Ammonia 58 per cent. standing at £4 5s. to £4 10s., Carbonated 58 per cent. £4 15s. to £4 17s. 6d., and Caustic 57-58 per cent. £4 15s. to £4 17s. 6d. SODA CRYSTALS are quoted at £2 17s. 6d. per ton in bags on rails. RECOVERED SULPHUR stands at £4 15s. to £5; and SALT CAKE at 23s. per ton in bulk. There is no change in SULPHATE OF ALUMINA and BLANC FIXIE.

Alum (Ground), tierces	...	f.o.b. Liverpool	24%	5 5	0
,, ,, barrels	...	,, ,,	24%	5 15	0
,, ,, tierces	...	,, Hull	24%	5 2	6
,, ,, ,,	...	Goole	24%	5 2	6
,, ,,	...	f.o.b. Glasgow	24%	5 2	6
Alum Lump) ,,	...	f.o.b. Liverpool	24%	4 12	6
,, barrels	...	,, ,,	24%	4 15	0
,, ,, tierces	...	,, Hull	24%	4 12	6
,, ,, ,,	...	Goole	24%	4 12	6
,, ,, ,,	...	London	24%	5 2	6
,, ,, ,,	...	f.a.s. Glasgow	24%	4 7	6
Alumina Sulphate	...	f.o.b. Tyne	net	3 11	3
Aluminoferric Cake, slabs		Liverpool ...	...	2 15	0
,, ,, tierces		,, ...	...	3 2	6
Alumina Cake, ... slabs		Glasgow ...	...	2 10	0
Blanc Fixe	...	f.o.b. Tyne	net	6 17	6
Bleach, ...	...	,, ,,	net	6 0	0
,, (soft wood)	...	f.o.r. Lancs.	net	5 5	0
,, (hard wood)	...	f.o.b. Liverpool	net	6 0	0
,, (soft wood)	...	landed London	net	6 0	0
Borax (crystals) ...	...	... ...	net	14 10	0
,, powdered ...	...	... ...	net	15 0	0
Chloride of Barium	...	f.o.b. Tyne	net	6 15	0
Caustic White 76%	...	f.o.b. Liverpool	net	8 15	0
,, 74%	...	,, ,,	net	8 10	0
,, 70%	...	,, ,,	net	7 10	0
,, 70%	...	f.o.r. Lancs.,	net	7 7	6
,, 60%	...	f.o.b. Liverpool	net	6 10	0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5 15	0
,, 60%	...	f.o.b. Liverpool	net	5 17	6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4 12	6
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4 12	6
,, ,, 48%		,,	net	4 7	6
,, ,, 58%		f.o.r. Widnes	net	4 10	0
,, ,, 48%		,, ,,	net	4 5	0
,, Ammonia 58%		f.o.b. Liverpool		4 5	0
,, ,, 48%		,,		4 0	0
,, Caustic 48%		,,		4 12	6
,, ,, 57-58%		,,		4 17	6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5 0	0
10-ton lots		ex ship Liverp'l	net	5 5	0
Oxalic Acid	...	f.o.b. Liverpool	3½%	per lb	0
Salt Cake	...	on rail, in bulk		1 2	0
Sal Ammonia (1sts) ...		f.o.b. Liverpool		35 0	0
,, (2nds) ...		,, ,,		33 0	0
Soda Crystals		f.o.b. Tyne	net	2 15	0
,, ,, ...		ex ship Thames	2½%	2 15	0
,, ,, ...		f.o.b. Liverpool	5%	2 17	3
Sulphur, roll		f.a.s. works	2½%	6 5	0
,, flowers		,, ,,	2½%	7 5	0
,, recovered ...		,, ,,	2½%	5 0	0
Sulphate of Ammonia ,,		,, ,,	2½%	9 12	6
,, of Copper ...		,, Liverpool	5%	16 10	0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	5	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15
Blanc Fixe (c.i.f. London)		7	0
White Sugar of Lead	...	24	0
Zinc Oxide	...	18	5
Bleaching Powder	...	5	15

CHEMICAL WOOD PULPS.—There is a fair demand, but prices if anything are easier. The open winter has led to some makers of SULPHITE offering at a reduction. SODA pulps are quiet.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8	12	6	to 9	0	0
,, Superior ,, ...	9	5	0	,, 9	10	0
,, Bleached, ...	11	10	0	,, 15	0	0
SODA, Unbleached, Common ...	8	5	0	,, 8	10	0
,, Extra...	8	15	0	,, 9	5	0
,, Bleached	10	10	0	,, 12	0	0

SCANDINAVIAN QUOTATIONS. (Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.

C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.	to 25.
,, Bleached	31.	,, 36
SODA, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.
SULPHATE, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached	$1.62	to 2
,, SODA Bleached	1.70	2
FOREIGN SODA, Unbleached ...	2.15	2.10
,, Bleached	2.70	2.80c.
,, SULPHITE, Unbleached	2.30	,, 2.75c.
,, ,, Bleached...	3.25	,, 3.30c.

MECHANICAL WOOD PULPS.—There is not much improvement in the mechanical wood pulp market; enquiry is limited, but prices are fairly well maintained.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£6	10	0		
Pine, Dry	£4	5	0	to £4	12	6
,, Moist	2	2	6	,, 2	7	6
Brown, Dry	4	15	0			
,, Moist	2	10	0			

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt.)

Pine Pulp, 50% moisture, ordinary ...	Frs. 11.	to 12.
,, ,, fine ...	12.50	,, 13.
,, dry, ordinary	11.50	,, 11.75
,, ,, fine	11.75	,, 13.
Aspen, ,, ,, ...	16.	,, 17.50
Half-Chemical Brown, 50% moisture	10.50	,, 11.
,, ,, dry ...	12 50	,, 13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
3 bales	Philadelphia	J. Burns	London
3704 ,,	Kragero	Becker & Co	,,
1216 ,,	Boston		,,
78 ,,	Rotterdam		,,
234 brls.	Ghent		,,
4853 bales	Drammen		,,
1528 rolls	Antwerp		,,
200 bales	Oporto		,,
812 ,,	Moss		,,
42 ,,	Rotterdam		,,
52 ,,	,,		,,

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Quantit	From	Importer	Port
6100 bales	Christiania	Christophersen & Co	London
4875 ,,	Ahus	Becker and Co	,,
672 ,,	,,	G. L. Begers	,,
800 ,,	Copenhagen	Johnsen and Jorgensen	,,
193 ,,	Gothenburg	R. L. Lundgren	,,
41 ,,	,,	W. G. Taylor & Co	,,
76 ,,	,,		,,
661 ,,	Ghent		,,
1624 ,,	Antwerp		,,
1050 ,,	Konigsberg	E. & W. Goldsmith	,,
41 ,,	Rotterdam		,,
30 ,,	Gothenburg		Liverpoo
1301 ,,	St. John's		,,
1291 ,,	Boston		,,
818 ,,	Christiania		Hull
204 ,,	Gothenburg		,,
278 ,,	Bergen		,,
2238 ,,	Sarpsborg		Manchester
448 ,,	Sannesund		,,
1000 ,,	Fredrikshald		,,
34 ,,	Gothenburg		,,
1178 ,,	Drammen		,,
1788 ,,	Gothenburg		Granton
49 rolls	Rotterdam		Grangemouth
320 bales	Christiania	Alsing and Co	,,
4510 ,,	Holmestrand		,,
880 ,,	Christiania		,,
33 ,,	Rotterdam		Grimsby
202 ,,	Portland, Me.		Glasgow
80 ,,	Copenhagen		Leith
500 ,,	Christiansand		,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	2285 bales	HOLLAND ...	49 rolls
,, ...	1528 rolls	NORWAY ...	29482 bales
,, ...	234 brls.	PORTUGAL ...	200 ,,
CANADA ...	1301 bales	PRUSSIA ...	1050 ,,
DENMARK ...	880 ,,	SWEDEN ...	6070 ,,
HOLLAND ...	245 ,,	U.S.A.	2711 ,,

ESPARTO.—The enquiry is strongly maintained for distant contracts in African esparto, and a large business is being carried through at about former quotations, although any change is in buyers' favour. Early loading Spanish has been sold at high rates. New crop still scarcely offered.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—Fair to Good	£4 10 0	to	4 17 6
,, Fine to Best	5 12 6	,,	5 17 6
Oran — Fair to Good	2 17 6	,,	3 0 0
,, First Quality	3 1 3	,,	3 2 6
Tripoli — Hand-picked	2 17 6	,,	3 0 0
,, Fair Average	2 12 6	,,	2 15 0
Bona & Philippeville	3 1 3	,,	3 2 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
2089 bales	Aguilas		Fleetwood
420 tons	,,	Morris and Co.	,,
1962 bales	Almeria		Grangemcuth
590 tons	Oran		Glasgow
2383 bales	,,		Fleetwood
300 tons	,,	Morris and Co	,,

STRAW.—Prices:

Oat Straw, ... c.i.f. London	40/0	; f.o.r. Goole,	
Wheat ,, ...	do.	42/0 ;	do. 40/0
Rye ,, ...	do.	52/6 ;	do 52/6

STRAW PULPS.—Moderate demand;

Prices, c.i.f. London, Hull or Leith.

German, dry, No. 1	£14 0
,, No. 2	£13 0 0

WASTE PAPERS.—Prices:

Cream Shavings ...	10/0	Small Letters ...	3/0
Fine ,, ...	8/0	Large ,, ...	4/3
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns	3/0
White Waste ...	1/9	Dark ,, ...	2/0
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/6
Blue Paper	2/0	Strawboard Cuttings	1/3
Crushed News	2/0	Jacquards	2/0

For Export: 2s/- per ton extra.

FOREIGN RAGS.—The imports of rags from France are fairly good; otherwise the demand is quiet. The imports at British ports during the week were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
131	Ghent	Hull	72	Ghent	Goole
75	Marseilles	,,	119	Hambro	,,
455	Rouen	,,	52	Antwerp	Grimsby
109	Amsterdam	,,	74	Dieppe	,,
143	Hambro	,,	56	Hambro	,,
76	Bremen	,,	113	Rotterdam	,,
210	Leghorn	,,	5	Amsterdam	Grgmth
41	Amsterdam	,,	79	Jersey	Southamptn
79	Marseilles	London	4	Guernsey	,,
170	Rouen	,,	160	Bordeaux	Liverpool
20	Amsterdam	,,	2	Boston	,,
48	Dunkirk	,,	332	St. Nazaire	Newhvn
105	Ghent	,,	73	Caen	,,
35	Gothenburg	,,	11	Cadiz	Leith
120	Konigsberg	,,	18	Orpenhagen	,,
7	Antwerp	Goole	16	Bremen	,,
41	Delfzyl	,,	300	Ghent	,,
43	Bruges	,,	1	Hambro	,,
32	Amsterdam	,,	25	Dunkirk	,,
133	Boulogne	,,			

Totals from Each Country:

BELGIUM ...	579 bales	HOLLAND ...	361 bales
CHANNEL Isles	83 ,,	PRUSSIA ...	120 ,,
DENMARK ...	18 ,,	SWEDEN ...	35 ,,
FRANCE ...	1157 ,,	SPAIN ...	210 ,,
GERMANY ...	411 ,,	U.S.A.	2 ,,

DUTCH RAGS.

f.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope (coils)	8/0	Not ree from wood	5/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	12/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No 1 6/0: No. II	5/0

STETTIN: C.i.f. Hull Leith, Tyne and London

SPFFF and SPFF	17/-	LFB (Blue)	8/0
SPF	11/0	CSPFFF	14/0
FF	8/0	CSPFF	10/0
FG	8/6	CFB (Blue)	6/0
FFX	7/0	CFX (Coloured) ...	4/0

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/
,, ,, No. 2	16/0	,, (Dark) ...	3/
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linens	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
seconds No. 4 ...	8/0	Unbleached Cutt ngs	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste	10/0; Fair ditto 8/0
Flax Card Waste	6/0
Hemp Waste, No. 1 8/0; No. 2	3/0

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FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester, Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/6
II 15/6; III ...	9/6	Bl e Linens... ...	7/6
White Cottons, I ...	15/6	New Light Prints ...	16/6
II 12/0; III ...	8/9	New White Cuttings	20/0
Coloured Cotton ...	3/6	,, Stay ,,	15/6

PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF ,, ...	12/6	Jute I	3/0
FG	10/0	,, II... ,, ...	2/6
LFB	8/0	Rope I... ... ,,	8/0
FF	5/6	,, II ...	6/9

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	2nd Canvas ...	7/6
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/0

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* c at Smyrna and Salonica.

HOME RAGS.—LONDON: Trade continues fair; prices unaltered.—BRISTOL: There is a moderate demand; prices well maintained.—MANCHESTER: The market for all grades of paper stock quiet, without alteration in values.—EDINBURGH and GLASGOW: Enquiry good.—DUBLIN: Trade quiet.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/0
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected) ...	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/0	Gunny	2/0-2/3

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/-

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/-
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	2/6-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/9
Outshots	12/0	W. Manilla Rope ...	7/0
Mixed Fines...	14/0	Tarred Manilla Rope	5/9
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Canvas (best)	15/0	Bagging...	2/3
2nd	8/	,, (clean) ...	3/0-4/0

GLASGOW.

Fines	12/6-16/0	Canva No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues	3/3	Manilla Rope	8/6
Bagging	4/0	Tarred Hemp	9/0

DUBLIN.

Whit Cuttings ...	16/0	Mill Bagging	6
Fines	9/0	White Manilla ...	5
Seconds	3/6	Tarred Hemp	6/6
Light Prints	2/6	Rigging	10/0
Black do.	1/6	Mixed Ropes ...	

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings	£3 0 to £4 0

STARCH.—Demand good; prices unchanged.

F.o.r. London, less 2½%

Maize—Crisp, £9 10/-; Pearl, £6 5/-; Powder, £6 15/0 Special £14.

Farina—Prime, £11 10/-; B.K.M.F., £13 10/-.

Delivered, less 2½%:

Rice—Special (in chests), £20 0/-; Crystal (in bags) £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£15

SIZING.—Glues scarce and dear, prices advancing as much as £3 and £5 per ton.

English Gelatines per cwt.	90/0	to	120/0
Foreign ,, ...	70/0	,,	100/0
Fine Scotch Glues	45/0	,,	60/0
Long Scotch Glues	35/0	,,	40/0
Common Black ,, ...	25/0	,,	28/0
"Town" Glues	38/0	,,	45/0
"Bone" Glues	26/0	,,	30/0
Foreign Glues	28/0	,,	35/0
Bone Size	5/6	,,	10/0
Gelatine Size	6/6	,,	10/0
Dry B.A. Pieces	50/0	,,	55/0
,, English Pieces	35/0	,,	45/0
Wet ,, ,, ...	8/6	,,	9/0
,, Sheep Pieces	3/0	,,	4/0
Buffalo Hide Shavings	32/0	,,	40/0
,, Picker Waste	32/0	,,	35/0

ROSIN.—The market is improving for low grades and stocks are reduced. Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WO	WW
4/10½	5/-	5/3	5/4½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS.—Fair enquiry.

Mineral Black ...	cwt.	3/6	PASTE COLOURS with
do. superior ...	,,	4/0	60% of colour, as follows:
Pure Ivory Black	,,	12/0	Orange Pulp ... cwt. 40/0
Ochre	,,	2/3	Golden Yellow Pulp 30/0
French J. C. Ochre	ton	60/0	Lemon ,, ,, cwt. 30/-
Chrome (pure) ...	cwt.	40/0	Prussian Yellow ,, 36/0
Red Oxide	,,	4/6	Green (free of arsenic 28/0
Umber, Devonshire	,,	50/0	Paste Blue, 20% ... 18/0
do. Turkish ...	,,	40/0	,, 33%; 26/0; 45% 45/0
Lamp Black ...	,,	5/0-7/6	Imperial Yellow (dry) 16/0
Ultramarine (pure)		35/0-45/0	(less 2½% d/d)
Cochineal	lb.	4/3-2/0	

METALS.—LONDON: COPPER steady and prices lower; TIN also shows a decline; LEAD firm. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	50	2	6	50	7	6
,, three months	50	8	9	50	13	9
Tough	53	5	0	53	15	
Best selected	53	15	0	54	15	0
Strong Sheets	61	0	0			
TIN—						
Fine foreign, cash	65	1	3	65	11	3
,, three months	65	11	3	66	1	3
LEAD—						
Spanish...				12	11	3
English...				12	15	0

MINERALS.—The market for CHINA CLAY is rather depressed. Enquiry for FRENCH and ITALIAN CHALKS is quiet, and prices are easier. BAUXITE shows a decline in value. SNOWDRIFT and SATINITE are in steady request.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine... ...	28/0	less 2½%; del.	Lancashire...	38/0
Pottery Super.	24/0	,,	,, ...	34/0
Ball Seconds ...	20/0	,,	,, ...	30/-
Seconds	15/0	,,	,, ...	25/0
Thirds	11/0	,,	,, ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall 10/6 to 23/6, bags 4/0 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 42/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

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French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 58/0, 64/0, 73/6, and 77/6 per ton, according to quality, less 2½%.
Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 2/6 per ton of 10 bags
Superfine Hardening, f.o.r. works, 40/- to 42/-.
Patent Hardening (2 ton lots) f.o.r. Lancs., £35/0.
Snowdrift (Paper Toughener), in ton lots, 12/- per cwt
Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.
Magnesite (in lump) 39/6 to 46/0 per ton.
Albarine, £3 del. mills.
Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.
Asbestos, brown grades, £14 to £14 12/6.
Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.
Bauxite, minimum alumina, 60%, 15/4 f.o.b.
Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.
Satinite, £3 to £3 6s. 0d., in casks, f.o.b Liverpool or Manchester.
Whiting, f.o.b., 10/6 to 12/3 per ton.
Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.
Hydrate of Alumina, £12 10/0.

LIME—The present price is 10/6 per ton f.o.r

BALING TWINE.—Prices :

	Nick.	Medium.	Fine
Hemp ...	4d. per lb.	4½d. per lb	5d. per
Mixed ...	3½d. ..	4d. ,,	4½d. ,

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

NEW PATENTS.

APPLICATIONS.

4,670. Improvements in and relative to papermaking machinery. A. H. Munro.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

1897.

8,664. Machinery for treating fibrous materials employed in the manufacture of paper. Masson and Scott.

19,797. Process and apparatus for the disintegrating bleaching, and like treatment of straw and other fibrous materials. Pond.

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IN PURE STRONG FELTY QUALITIES.

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DERBY STREET MILLS,
BURY, LANCASHIRE.
ALL FELTS for Papermakers.
Telegrams: "KENYON, BURY."

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
ARGENTINE	13	—	115
AUSTRIA	164	—	—
BELGIUM	1419	4	—
CHANNEL ISLES ...	1	—	—
CAPE COLONY	4	—	—
DENMARK	67	—	—
FRANCE	791	106	—
FINLAND	75	—	—
GERMANY	1475	7	11
HOLLAND	29245	6	—
ITALY	41	—	—
JAPAN	—	107	—
NORWAY	6317	—	—
SPAIN	21	—	—
SWEDEN	6569	—	361
U.S.A.	109545	253	485

Including the Following:—

Quantity	From	Importer	Port
50 cases	Boston	Hazel, Watson & Co	London
6 ,,	,,	McCoy	,,
29 ,,	,,	Hunt, Fourdrinier	,,
2, bales	Fiume	Brown, Brough & Co	,,
9 ,,	,,	W. D. Edwards	,,
19 ,,	,,	Brown, Brough & Co	,,
1 ,,	,,	Spicer & Sons	,,
43 ,,	Gothenburg	R. L. Lundgren	,,
21 ,,	,,	C. L. Lockwood	,,
12 ,,	,,	J. Hamilton	,,
6 ,,	,,	E. Sabel	,,
34 ,,	,,	Crabb & Co	,,
298 ,,	,,	R. L. Lundgren	,,
53 ,,	,,	G. Schenkenwald	,,
7 ,,	,,	E. Lloyd	,,
284 ,,	,,	J. Eberstein	,,
619 ,,	,,	Skarblacka & Co	,,
103 ,,	,,	Alsing & Co	,,
24 ,,	,,	J. Hamilton	,,
39 ,,	,,	Cookson & MacDonald	,,
17 ,,	,,	J. Spicer & Sons	,,
100 ,,	,,	C. Morgan	,,
11 ,,	,,	A. Rosedale	,,
203 ,,	,,	A. J. Brown & Co	,,
25 ,,	,,	L. D. Dixon & Co	,,
51 ,,	,,	L. C. Lockwood	,,
17 ,,	,,	Grosvenor, Scott & Co	,,
533 ,,	New York	Lepard & Smith	,,
210 ,,	,,	E. Lloyd	,,
412 ,,	Skien	Olive & Partington	,,
38 ,,	,,	Brown & Brough	,,
26 ,,	,,	Spicer Bros	,,
3 ,,	,,	Sands & McDougall	,,
83 ,,	,,	J. Hamilton	,,
128 ,,	Trieste	Schenler & Co	,,
9 ,,	,,	Grov. Pontelli	,,
503 ,,	Uddevalla	D. Gulland	,,
97 ,,	,,	R. L. Lundgren	,,
37 ,,	,,	Schenkenwald & Co	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	4875	441	845
ARGENTINE	—	117	49
AFRICA	22	14	130
BELGIUM	15	44	34
B. GUIANA	—	—	3
BRAZIL	100	—	35
CAPE COLONY	361	21	184
CHINA	20	28	18
CANADA	13	—	—
DENMARK	—	11	20
EGYPT	—	6	3
FRANCE	—	119	143

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
GERMANY	—	49	—
HOLLAND	—	55	26
INDIA	669	271	325
JAPAN	—	72	—
MALTA	11	—	—
NEW ZEALAND ...	582	247	171
SPAIN	—	13	65
S. AMERICA	27	—	24
S. SETTLEMENTS ...	—	—	10
SWEDEN	—	—	12
TURKEY	—	5	—
U.S.A.	45	30	—
W. INDIA	25	16	4

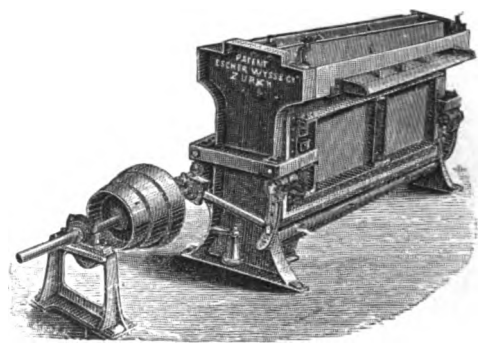
FROM GLASGOW.

AUSTRALASIA	1286	567	435
ARGENTINE	162	—	—
B. GUIANA	—	13	
CHILI	—	45	—
CANADA	—	—	13
CAPE COLONY	—	—	90
HOLLAND	—	—	47
INDIA	186	27	117
SWEDEN	—	—	10
U.S.A.	—	—	33

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



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HAMBURG,

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Soda and

Mechanical

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OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden) . ..	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France) . ..	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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British Imports of Foreign Paper.

UNPRINTED.

COUNTRY.	FEBRUARY.			JAN.-FEBRUARY.		
	1896.	1897.	1898.	1896.	1897.	1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Sweden	42,165	35,081	39,586	82,183	76,120	78,895
Germany...	37,918	28,686	27,471	86,727	70,379	63,209
Holland	53,603	32,265	40,479	105,288	78,801	77,872
Belgium	20,085	19,453	15,537	39,666	36,483	37,439
Various	53,403	68,727	117,606	105,668	143,457	245,917
TOTALS	207,174	184,212	240,679	419,537	405,240	503,332
VALUE.	£	£	£	£	£	£
Sweden	32,068	24,632	30,629	63,806	52,059	59,290
Germany...	34,857	27,916	26,370	79,519	66,232	57,903
Holland	37,732	29,690	34,735	76,030	66,939	67,376
Belgium	27,424	23,729	20,497	52,421	43,820	46,803
Various	56,504	59,476	91,908	117,302	124,638	191,755
TOTALS	£188,585	£165,443	£204,139	£389,078	£353,688	£423,127

PRINTED.

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Germany...	625	916	687	1,245	1,559	2,358
Holland	1,112	1,500	1,123	2,563	3,463	2,373
Belgium	2,289	2,009	4,459	4,513	6,569	7,931
France	623	906	1,111	1,366	2,028	1,944
Various	726	1,365	1,608	1,943	2,927	4,403
TOTALS	5,375	6,696	8,988	11,630	16,546	19,009
VALUE.	£	£	£	£	£	£
Germany...	2,086	2,717	1,993	4,141	5,053	6,091
Holland	4,310	4,194	4,781	9,117	9,598	9,528
Belgium	6,591	5,947	12,560	11,334	18,504	22,016
France	3,619	5,425	4,829	7,627	11,255	9,196
Various	2,181	3,821	3,949	6,387	6,944	10,187
TOTALS	£18,787	£22,104	£28,112	£38,606	£51,354	£57,018

STRAW, MILL, & WOOD PULP BOARDS.

Quantity—cwts. ...	123,129	68,095	111,006	239,304	151,100	272,749
Value	£42,307	£26,295	£38,889	£82,603	£55,906	£98,722

TOTALS.

Feb.	1898	360,673 cwts	£271,140	Jan.-Feb.	1898	795,090 cwts	£578,867
,,	1897	259,003 ,,	213,842	,,	1897	572,886 ,,	460,948
,,	1896	335,678 ,,	249,679	,,	1896	670,471 ,,	510,287

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AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
23 cases	Antwerp	Kupfer Bros	New York
7 ,,	,,	Vandergrift and Co	,,
5 ,,	,,	Wagner and Co	,,
20 ,,	,,	J. W. Hampton	,,
14 ,,	,,	Stiner and Co	,,
5 ,,	,,	P. Ruttmann	,,
5 ,,	,,	Campbell and Co	,,
5 ,,	,,	G. A. and H. Meyer	,,
3 ,,	,,	Scovill and Adams	,,
11 ,,	,,	Stiner and Co	,,
10 ,,	,,	P. Ruttmann	,,
20 ,,	,,	J. W. Hampton	,,
15 ,,	Bremen	Sheldon and Co	,,
1 ,,	,,	Wicke and Co	,,
27 bales	Bordeaux	E. T. Molloy	,,
447 rolls	Glasgow	Campbell and Co	,,
16 cases	Hamburg	De Jonge and Co	,,
3 ,,	Hull	J. Hunter	,,
66 ,,	Havre	American Tobacco Co	,,
1 ,,	Liverpool	Anthony and Co	,,
1 ,,	,,	Bentley Frazier & Co	Boston
11 bales	,,	Dennison Mfg. Co	,,
1 cases	London	Frost and Adams Co	,,
10 ,,	,,	Favor, Ruhl and Co	New York
24 ,,	,,	E. Fougera and Co	,,
38 ,,	Rotterdam	De Jonge and Co	,,
3 ,,	,,	A. V. Benoit	,,

CHEMICAL FIBRE.

30 tons	Antwerp	Downing & Co	New York
10 ,,	Hull	F. Bertuch and Co	,,
260 ,,	Nova Scotia	H. P. Ramsdell	,,
15 ,,	,,	Castle & Gottheil	,,

MANILLAS.

124 coils	London	Westhorp and Co	Boston
95 bgs.	,,	,,	,,
67 ,,	Liverpool	Butterworth and Co	,,
50 ,,	,,	,,	,,

RAGS.

296 bales	Antwerp	A. Katzensten	New York
539 ,,	Genoa	Jessup & Moore	,,
143 ,,	,,	Castle and Gotheil	,,
43 ,,	Glasgow	Libmann and Co	,,
31 ,,	Hamburg	Jessup & Moore	,,
152 ,,	,,	Castle and Gottheil	,,
112 ,,	,,	Lewy Bros	,,
229 ,,	,,	Joseph and Co	,,
141 ,,	Havre	J. Pirnie	,,
222 ,,	Hull	Train, Smith and Co	,,
382 ,,	,,	Dutton and Co	,,
225 ,,	,,	Mason and Co	,,
147 ,,	,,	Castle and Gotheil	,,
62 ,,	Liverpool	,,	,,
240 ,,	,,	Butterworth and Co	Boston
102 ,,	,,	W. F. Corne	,,
25 ,,	,,	,,	,,
25 ,,	,,	Dutton and Co	,,
17 ,,	London	W. F. Corne	,,
57 ,,	,,	Overton and Son	New York
64 ,,	,,	Castle and Gotheil	,,
97 ,,	Rotterdam	Train, Smith & Co	,,
11 ,,	,,	W. H. VanderToon	,,
47 ,,	Stettin	Dutton & Co	,,

WASTE PAPERS.

100 bales	Glasgow	Libmann and Co	New York
49 ,,	Liverpool	J. Pirnie	,,
63 ,,	,,	Butterworth and Co	Boston
160 ,,	London	Train, Smith & Co	,,
58 ,,	,,	Wheelwright Paper Co	,,
152 ,,	,,	Castle and Gotheil	New York

BLEACHING POWDER.

60 cks.	Antwerp	Fuerst Bros	New York
124 ,,	Liverpool	J. L. and D. S. Riker	,,
42 ,,	,,	J. Marble	Boston
381 ,,	,,	J. L. & D. S. Riker	,,

CAUSTIC SODA.

Quantity	From	Importer	Port
250 cks.	Liverpool	Hill's Son & Co	New York
50 ,,	,,	Welsh, Holme and Co	,,

SODA ASH.

1200 bgs.	Liverpool	Wing and Evans	New York
80 ,,	,,	J. L. and D. S. Riker	,,
34 cks.	,,	Warren and Co	Boston
155 ,,	,,	Wing and Evans	,,

WOOD FIBRE.

170 bales	London	Page, Newell and Co	Boston

SIZING.

578 bgs.	Liverpool	Butterworth and Co	Boston
201 ,,	,,	Baeder, Adamson & Co	,,
55 ,,	,,	Train, Smith and Co	,,

SODA CRYSTALS.

280 bdls.	Liverpool	Warren and Co	Boston

ALKALI.

23 cks.	Liverpool	Linder and Meyer	Boston

SULPHUR.

334 bgs.	Liverpool	Linder & Meyer	Boston

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Exports of British Paper

PRINTINGS AND WRITINGS.

COUNTRY.	FEBRUARY.			JAN.-FEBRUARY.		
	1896.	1897.	1898.	1896.	1897.	1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	4,031	2,378	3,112	9,009	5,306	5,675
U. States	477	751	1,085	1,731	1,821	2,588
S. Africa	5,179	6,506	4,337	11,347	11,159	9,089
E. Indies	5,802	3,738	5,696	11,813	9,144	11,818
Australasia... ...	21,994	34,073	24,297	52,252	54,503	47,775
B. N. America ...	893	1,547	584	2,025	2,451	1,316
Various	9,791	9,092	11,991	24,624	18,676	22,452
TOTALS ...	48,167	58,085	51,102	112,801	103,060	100,713
VALUE.	£	£	£	£	£	£
France	6,189	4,053	5,274	14,249	9,225	10,168
U. States...	1,137	2,594	1,720	3,821	4,871	3,945
S. Africa	8,156	9,953	6,772	18,646	17,347	13,579
E. Indies	10,310	6,974	9,430	20,138	16,867	19,707
Australasia	25,998	37,238	29,328	63,266	67,097	59,283
B. N. America ...	1.549	2,208	1,418	3,475	4,208	2,921
Various	17,313	18,944	20,697	43,072	36,683	37,839
TOTALS	£70,652	£81,964	£74,639	£166,667	£156,298	£147,442

OTHER KINDS.

(Excluding Hangings).

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts
France	1,063	661	578	2,256	1,460	1,765
U. States...	961	848	378	2,463	1,500	907
S. Africa	4,371	2,910	4,107	9,115	7,487	7,006
E. Indies	1,246	967	2,261	3,150	1,922	3,914
Australasia	7,711	5,266	5,322	19,052	15,535	13,106
B. N. America ...	168	213	337	576	342	626
Various	3,566	4,055	4,372	7,139	7,901	7,875
TOTALS	19,081	19,420	17,355	43,751	36,147	35,199
VALUE.	£	£	£	£	£	£
France	4,049	2,867	2,571	6,420	6,004	5,406
U. States	3,206	2,915	1,426	8,280	5,280	3,173
S. Africa	4,485	2,888	3,682	8,917	7,210	6,640
E. Indies	1,912	1,133	2,440	4,342	2,771	4,699
Australasia... ...	6,935	5,063	5,245	17,377	14,095	13,256
B. N. America ...	518	740	799	1,183	1,100	1,444
Various	7,029	7,248	7,199	14,074	13,755	13,160
TOTALS ...	£28,134	£22,854	£23,362	£60,593	£50,215	£47,828

TOTALS *(Including Hangings)*:

Feb.	1898	76,160 cwts	£119,846	Jan.-Feb.	1898	150,976 cwts	£236,123
,,	1897	80,748 ,,	122,489	,,	1897	153,918 ,,	241,713
,,	1896	74,556 ,,	116,771	,,	1896	170,341 ,,	261,885

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Wood Pulp

Sulphite,
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SPECIALITY

FINEST QUALITIES OF

Mechanical Pulp.

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Electrolysis.

A patent has recently been granted Messrs. E. J. Hunt and E. F. Watson relating to a process whereby chlorine is obtained by the electrolytic decomposition of a crude solution of protochloride of iron, such as is obtained as a waste or residual product in the treatment of iron with hydrochloric acid in certain manufacturing processes.

The crude solution of protochloride of iron for the manufacture of chlorine is operated upon in the following manner:—A tank, either metallic or non-metallic, is used, into which is placed a porous vessel; or a tank is used which is divided into two parts by a porous diaphragm. In the porous vessel or in one division of the tank, is placed a rod or plate of carbon, and into that portion of the division or cell containing the carbon rod or plate is introduced a strong solution of common salt or chloride of sodium, the other portion of the tank being filled with the solution of protochloride of iron. Through the arrangement described the patentees pass an electrical current, preferably from a dynamo, the connections being so made that the current enters at the carbon which constitutes the anode of the arrangement and passing through the electrolytes, that is, the solutions of common salt and protochloride of iron, and also through the separating porous diaphragm, passes out at the tank, or where a non-metallic tank is employed at strips of iron suspended in the protochloride of iron, the metallic tank or strips of iron constituting the cathode.

By the electrolytic action set up, chlorine is evolved at the anode, the chlorine being collected and directed into chambers containing quicklime for the manufacture of bleaching powder, or employed for any other purpose to which free chlorine is or may be applicable.

Pure iron is deposited on the cathode strips which, when a sufficient thickness has been obtained, are removed and replaced by fresh ones, the deposited iron being used for purposes for which very pure iron is applicable.

The process described may either be intermittent or continuous; that is, the solution of protochloride of iron may be operated upon by the electrical current until its strength has been so far reduced that it cannot any longer be economically employed when it may be drawn off and replaced by a strong solution; or a continuous and gentle stream of a strong solution of protochloride of iron may be introduced into the cell or compartment containing the cathode, and by means of an overflow pipe an equal quantity of the partially exhausted solution be allowed to run out of the apparatus.

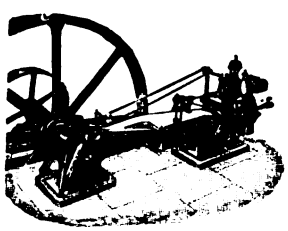
DERMATINOS: A PAPER SUBSTITUTE FOR LEATHER.

"There is nothing like paper" will surely soon be quite as familiar an expression as "There is nothing like leather," particularly when the former is introduced as a substitute for the latter. A demonstration was given recently at the engine works of Messrs. Geo. Harradon and Co., Queen's Dock, Liverpool, by Mr. G. K. Littlefield, Boston, of the process of manufacture of a material called Dermatinos, for use in the manufacture of boots and shoes.

The machine used in the manufacture is a very simple one, consisting of some three rollers, two placed vertically, round one of which the special unsized paper is rolled after first passing over one large roller, over another bar or guide roller, under another similar one placed at bottom of a tank containing some chemical preparation, through which the paper to be treated passes. From the well it passes on to the lower large-size roller, and is there wound round to the desired thickness, which is governed by the turn of the machine.

The paper is then cut, and the rolls turned for a few minutes, after which a sharp knife cuts the rolled paper on the barrel from side to side. This is then placed in a bath, where it remains for a time varying from two days to two-and-a-half weeks, according to thickness. It is then removed, undergoes two other chemical treatments, the compound, by the way in which it is "cooked," reminding one very much of ordinary animal glue, and after drying it is ready for the market. The whole process lasts, at the outside, a month.

It is stated that this material can be produced at less than one-half the cost of the ordinary leather used for the purpose, for which it is claimed Dermatinos is suitable. In fact, its adaptability for belting and ordinary soling and heeling of boots is considered excellent.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"SALAMANDER" THE UNITED ASBESTOS COMPANY LIMITED. LONDON. INDESTRUCTIBLE

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Best and Cheapest in the Market; Will not injure Boiler Plates.

Asbestos Goods
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UNITED ASBESTOS Co. LMTD. LONDON. PURE ITALIAN MILLBOARD EXTRA QUALITY. INDESTRUCTIBLE. A1

UNITED ASBESTOS
A1 MILLBOARDS
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UNITED ASBESTOS
Salamander Lubricating Cream and Oils

Specially adapted to Papermaking Machinery.

The UNITED ASBESTOS
Patent "SALAMANDER" DECORATIONS,

Novel Application of Asbestos in Embossed Wall Decorations. Designs by Leading Artists. Capable of infinite variety of decorative treatment. Fireproof.

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No Necessity to Remove Roll.

SUITABLE FOR

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RAG ENGINE ROLL BARS AND BED PLATES

In Special Bronze Composition, Q. I. BB Best Refined Crucible Cast Steel, Refined Crucible Cast Steel and Selected Bessemer Steel.

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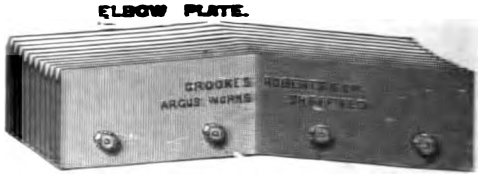

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ROLL BAR.

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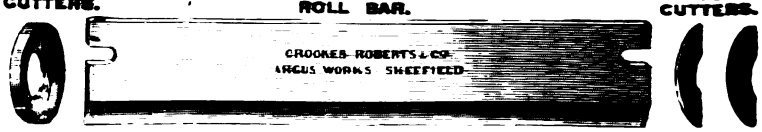
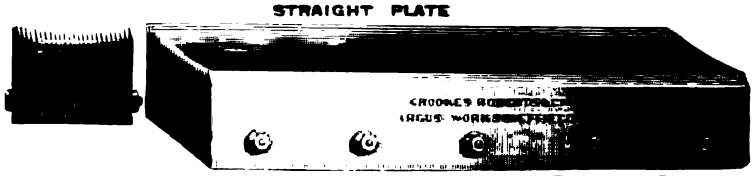


STRAIGHT PLATE



EVERY DESCRIPTION OF TOOLS USED BY PAPERMAKERS.

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The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. NO. 11. LONDON: MARCH 18, 1898. EVERY FRIDAY. PRICE SIXPENCE.

THE Papermakers' Association.

ANNUAL MEETING and DINNER.

The annual general meeting of the Papermakers' Association was held at the Hotel Cecil on Wednesday evening. The chair was occupied by the President of the Association, Sir John Evans, K.C.B., F.R.S., supported by the Vice-President, Capt. E. Partington, and a large muster of members.

The first business was the reception and adoption of the report and accounts for the year ending 31st December, 1897, as follows:

THE REPORT.

"The Council in presenting their report for the year ending 31st December, 1897, are glad to be able to announce that the funds of the Association are in a satisfactory condition, and that further progress has been made towards placing the Association in a strong financial position. The sum of £200 was placed on fixed deposit at the bank to form the nucleus of a reserve fund. The annual income is already sufficient to leave a considerable surplus over the annual expenditure, and therefore the Association only needs additional members in order to build up a considerable reserve fund in a few years. This fund would justify the Council in re-arranging the scale of subscriptions or in incurring fresh expenditure to make the Association more useful to the trade.

"The last annual meeting was held in Manchester, on March 17th, 1897, at the "Albion Hotel," presided over by Mr. Lewis Evans. The meeting was well attended by papermakers from the northern district. At the conclusion of the meeting the annual dinner was held, the total number of members and visitors present being thirty-seven. Speeches and music followed.

"LEGISLATION.—There has been nothing in the legislative proposals of the Government for the year under review specially affecting your interests, or calling for the serious attention of the Council.

"The Workmen's Compensation Bill was carefully considered, but as accidents are happily very rare in paper mills, and the employers and employees are on very good terms, it was thought undesirable and unnecessary to take any action thereon.

"The Jubilee celebrations caused an early prorogation of Parliament, and consequently private members had very little opportunity of making progress with their Bills.

"WOOD PULP CONTRACT NOTE.—Communications have passed between your Association, the Scottish Papermakers' Association, and the British Wood Pulp Association, relative to the Wood Pulp Contract Note. A satisfactory solution of the various differences were arrived at, and the note printed and circulated. The Scandinavian Chemical Wood Pulp Association now desire some minor alterations, and the note is again under consideration. Your Council are of opinion that if the purchasers and their agents hold by this note the vendors will agree to sell on its terms.

"CODE OF TRADE CUSTOMS.—Much time has been occupied during the year with the

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"(Signed) LEWIS EVANS,
"Chairman of Southern Committee.
"R. DUXBURY,
"Chairman of Northern Committee.
"1st March, 1897."

A discussion ensued on several topics, including the action against the Medway Paper Mills Company and the Rivers Pollution (Prevention) Bill, both matters being referred back to the Council. In the course of a discussion that ensued on the subject of the importation of foreign paper, it was pointed out that from the trade journals that came into their hands it was quite apparent that the imports of foreign paper now amounted to upwards of three millions sterling. The increase had been comparatively large during the last eight or nine months. It was strongly urged that the Council of the Association should do something to enable the Colonies to become more closely associated with them, if it only had the effect of increasing the price of the raw product of the foreign competitor. It was also remarked that during the last three years there had been a diminution of the imports of paper into this country from the continent of Europe, the large aggregate of

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THE PAPERMAKERS' ASSOCIATION.

SIR JOHN EVANS. F.R.S.
PRESIDENT

CAPTAIN PARTINGTON J.P.
VICE PRESIDENT.

T.A. HODGKINSON, ESQ.
HON. TREASURER.

LEWIS EVANS, ESQ.
CHAIRMAN.

JAMES MARSDEN, ESQ.
HON. AUDITOR.

J. E. JEPSON, ESQ.
NORTHERN SEC.

G. HUMPHREYS-DAVIES, ESQ. F.S.I.
HON. SEC.

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hon. treasurer (W. S. Hodgkinson and Co.), George Chater (Grosvenor, Chater and Co., Ltd.), James Marsden, hon. auditor (Charles Marsden and Sons), G. F. Busbridge and Sons, Richard Barton (Gillespie and Mason, Ltd.), James Wilson, R. G. Craster, Nina Hassan, Herbert Green (J. Barcham Green and Sons), Samuel Chadwick (Chadwick and Taylor), William Chadwick (Chadwick and Taylor), R. Herbert Ling, C. Barton Smith, Lawrence Green (Maidstone), W. A. Kershaw (Medway Paper Mills), C. E. Corke, Harold Spalding, Roland Green (Thomas and Green), John Cronshaw (Bury Papermaking Co., Ltd.), Edwin Thomas (Gravesend), S. Haigh (J. H. Waddington and Co.), J. Gordon, Henry Clegg (Sun Paper Mill Co., Ltd.), R. P. Skelton (Ramsbottom Paper Mill Co.), Isaac Crompton, Lewis Clegg (Olive and Partington), Herbert Partington, J. A. Kidd, W. Greig, F. H. Hare, John Thomas (Soho Mills), James T. Thomas, James Thomas, Neil Turner (Edward Lloyd, Ltd.), J. E. Croft (Darwen Paper Mill, Ltd.), Squire Hill (North of Ireland Paper Mill Co.), Moses Duxbury (Darwen Paper Mill Co., Springvale), G. Wilmot and Son, Albert E. Reed, A. W. Dean, Lionel G. Chater, Stanley Cousins, Joseph Dixon (Peter Dixon and Sons), Ernest C. Reed (Dartford), G. Humphreys-Davies, F.S.I. (hon. sec. Association), J. Hacking, H. Mathieson, R. Wettre, C. J. Porritt, Ernest Croft (*Western Morning News*), James Turner, W. H. Reed, J.P. (Reed and Smith).

Letters of apology for inability to be present were read from Mr. E. Laroche Joubert, member of the French Parliament, president of the Union des Fabricants de Papier de France, and president of the Class 88 (Papermaking), International Exhibition of 1900, who expressed on behalf of the French paper trade their best wishes for the welfare and prosperity of the Association; also from Sir Edward Russell, president of the Institute of Journalists; Mr. T. Y. Nuttall, late hon. secretary of the Northern branch of the Association; Mr. Sheriff Green, James Kenyon, M.P., and several others.

Justice having been done to an excellent repast, and the tables cleared, the CHAIRMAN submitted "The Queen and Royal Family" and "The Navy, Army, and Auxiliary Forces," both toasts being loyally received. The latter toast was patriotically responded to by Capt. Partington and Capt. Craster,

Mr. L. P. ANDREWS then proposed "The Papermakers' Association." He referred to the fact of the formation of an association in the wood pulp trade, which had brought them into contact with the two British associations—the English, south and north, and the Scottish—and they had received from them the most courteous recognition, which they all, he felt sure, appreciated. They knew that in the past the wood pulp trade had been more or less despised, but that, he thought, had passed away, and they were now useful members of society. (Hear, hear.) They had felt very much the difficulties of starting themselves as a recognised branch. They all believed in recognised associations and mutual support, and not in what had occurred in many trades in the past—opposition—which was entirely unnecessary. They felt that by means of this Association they could work good for all. (Applause.)

Mr. W. L. TOD, in responding on behalf of the Scottish Association, thanked them for the hearty way in which they had received the toast. Papermakers generally were brothers—they were rivals in trade to a certain extent, but they were always friendly and willing to help each other out of difficulties when they occurred. He dared say Sir John Evans found, as they found in the Scottish Association, that some papermakers were not inclined to join the Association. This might be the case in times when there may be no burning questions in the trade, but when there were difficult questions cropping up, he was sure associations of this nature did a great deal of good to the whole trade. (Applause.) Of late years there had not been many difficult questions, perhaps, but he could see in the future there would be one or two, and one of these was in regard to river pollution. As an Esk papermaker, they on the Esk had had an experience of the burning question of pollution and its prevention that members in no other part of the country had had. It was some 30 years ago now since an action was taken at the instance of the proprietors of the river Esk, and for these 30 years all the mills on the Esk had been working under interdict. Certain arrangements had been made, but almost all that time they had been working under the supervision of so-called experts, and the trouble they had been put to in this connection had been no small one. They had had to find out a great many things, and they found out a great many more than those experts had told them. Those members present who were now beginning to realise that they would have to face this question, would reap the advantage of the experience they had had on the Esk. They had had several papermakers on the Esk looking over their arrangements, and these arrangements with other slight details had been adopted at some places where this question had come up. He saw there was to be a Royal Commission to go into the matter, and no doubt the Association would be able to do good work there in laying the matter before them from the papermakers' point of view. (Applause.)

Mr. R. D. DUXBURY, in replying on behalf of the Northern Committee, said he felt sure some of the members of the Association must be highly gratified to see such a good representation from the Northern Committee. (Hear, hear.) The Southern Committee did not give them such a good representation. (Shame, and a voice: Next time.) They were full of troubles and trials at the present moment, what with pollution and competition from other countries, but as Englishmen they were always pleased to have a good dinner. He was sorry they were not supported by more members of the papermaking fraternity. He expressed pleasure with the active part the Association had taken during the past few years, and drew attention to

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the good balance they had in hand, anticipating that in a little time they would have a balance that would form a nucleus of a fund of some kind in connection with the question of river pollution. (Applause.)

MR. LEWIS EVANS responded on behalf of the Southern Committee. He remarked that the Papermakers' Association of England was not supported in the way it should be by the paper trade. They had numerically 100 members represented out of 250 in Great Britain. This was a small proportion, but in papermaking they had at least threequarters of the output on the Association. He had much greater pleasure in speaking on behalf of the Association now than three years ago, when they attempted to resuscitate what appeared to be a dying association, and they handed over, or there was handed over to them, a balance of £2 with a debt of £200 on the other side. (Laughter.) It was not then easy to approach members and ask them to look at the enormous advantages of joining them. Now they were in the position of not only paying off the debt of £200, but they had £207 in the bank. Under these circumstances those who were members of the Association ought to feel themselves in a very strong position to encourage friends to come and join them. In order to make it more easy to get in outsiders, it had been proposed to get out a list showing the mills belonging to the Association and those still standing out, and send it round to every member, urging them to get papermakers to join. They were not altogether stagnant, having increased their membership during the past four years by six members. Still, there was much to be done. He thought they only needed to put before their friends the advantages of the Association, not only in times of burning questions, but in these ordinary times. He thought the Association had placed a mark to its credit for having secured the talking out of the Rivers Pollution (Prevention) Bill. Possibly they might meet the difficulty of American competition better by getting a member of Congress to introduce some river pollution Bill in America, than in trying to alter the fiscal relations there. (Laughter and applause.)

THE CHAIRMAN remarked that he was glad to find they had a representative from Ireland with them. There was thorough fraternity between the sister country of Ireland and the Association, and he called on

MR. SQUIRE HILL, who also responded to the toast, observing that a remark made in Manchester at last year's meeting that the paper trade in Ireland had died out had brought him there. He had come there to tell them that they were all alive and kicking in Ireland. (Laughter.) He expressed sorrow for the British paper trade in respect to competition, and added that he had not heard any complaint from the "five chickens in Ireland" about prices. He concluded a humorous speech with thanks for the splendid reception they had given him.

MR. R. BARTON then submitted the toast of "The Allied Trades." These trades, he said, were varied and various. The first gentleman he had on his list to reply was connected with wood pulp. He thought it was in this same room he heard a gentleman enunciate a piece of ancient history, very ancient, that it was Mother Eve who first used a piece of wood pulp. (Laughter.) He was sure it must have been a warmer climate there than ours. They had also a gentleman with them connected with newspapers. In conclusion he emphasised the importance of papermakers acting together and not individually, and expressed his great pleasure to see the representatives of the allied trades with them.

MR. C. T. CRAIG responded on behalf of the British Wood Pulp Association. The paper trade, if they would excuse him saying so, was particularly a modern one, whereas some of the allied trades go back right into the dim age. In fact, he understood that the first of the allied trades that was practised in this country was the colour trade. The Romans, when they first came to this island, found our ancestors manufacturing the blue dye which they painted themselves with. (Laughter.) He feared, however, that those now engaged in the paper trade would all look extremely blue before long unless the prices mended somewhat. (Question.) In conclusion, he related an anecdote about a French parson, who on his death-bed called his son and told him he had a great secret to impart to him. He said, "My son, you can make wine from anything, even from grapes." (Laughter.) In the same way he should say they could make paper from anything, but no doubt the most suitable article and the one that gave the least trouble was wood pulp. (Laughter.) He thanked the members present for the kind way they had received the toast of the allied trades. (Applause.)

MR. C. J. PORRITT, in replying as a felt manufacturer, said he was sure they would all try to keep up the British felts. There were no felts like them. He hoped they would always continue to work together. His greatest wish was that the British paper trade should be the finest trade in the world. He knew they could beat others in making paper. Prices were bad, yet some makers could pay very good dividends. It seemed to him they were all too liable to grumble. Competition was growing every day and they would have to meet it. (Applause.)

MR. NEIL TURNER (Edward Lloyd, Ltd.), in responding, said he took it newspapers were a very important item in the allied trades, because without newspapers papermakers would suffer considerably. The cheaper that paper became the more of it would be used. He thought this had been demonstrated in the last few years in a marked degree. The cheaper paper had become the more papers had been started and the greater had been the circulations. There were many illustrations of this in London, and no doubt the same thing could be said in Manchester and Liverpool and other large provincial towns. He thought

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at the same time newspaper proprietors admitted the fact that they did not want to use paper unless it could be produced at a profit. They wanted it cheap, and they got it cheap and nasty. He thought they would much rather have it at a moderate price, and good. He had had some experience of all sorts of paper, and he thought there was no more pitiable sight than seeing the cheaper paper being manipulated in the machine rooms. The men who had to undertake that task really hated it. He thought they would rather pay something out of their pockets and have better paper. It was a state of things that ought to be remedied, and the thing was to do away with the excessive competition which existed at the present time. Talk about river pollution, he thought that what they had to contend against was "sea pollution," the pollution that came from other countries. (Hear, hear.) He thought the time had come when some arrangement would be made whereby the profits of papermakers would be on some fair basis. Papermakers did not expect any excessive profits—he thought the day for that was gone. They certainly expected a moderate profit, and something more than was to be derived from consols. The firm he represented both made and used papers on a large scale, and the opinion they had come to was that paper could not be produced below a certain sum. Certain makers could put paper on the market at a price that did not pay them. It had been done to that extent for months past. But the thing would cure itself in due time. He thought they only wanted to have a little patience, and then they would see happen in the paper trade as in other trades—that there was a turning point, and he thought they were nearing that turning point now. (Hear, hear.)

The PRESIDENT then proposed the toast of "The Visitors," remarking that it was always with satisfaction that they found among them those who, although not immediately connected with the trade, yet took a certain amount of interest in it and honoured them with their presence. He coupled with the toast the names of Mr. G. Mounro Thompson and Mr. Mathieson (Sweden), both of whom appropriately replied.

Mr. G. F. BUSBRIDGE then gave the toast of "The President," whom, he said, he had had the pleasure of knowing for 40 years or more, and had therefore had ample opportunities of knowing, seeing, and believing the sterling qualities of their esteemed president. Under the difficulties which their trade was suffering from in 1860, Sir John Evans came out nobly and bravely and consented to be the president of the first papermakers' club. That was the beginning—the starting point of these societies or associations. Sir John had ever held the distinguished position royally, nobly and well. (Hear, hear.) He asked them to join with him in showing Sir John Evans their hearty appreciation in the toast he had to propose. (Applause.)

The PRESIDENT, in reply, acknowledged that it was with a great amount of satisfaction that he was present that evening. He had been connected with the paper trade now for a period of nearly fifty-eight years, and for the last forty years he had taken an active part in the management of the trade. He hoped he might be spared yet for a few years to occupy the position—not simply as a post of honour, but one in which he might offer assistance to the trade. It was a satisfaction to him to see the Association flourishing in the manner it was. He looked forward to the day when the Association would occupy an even more important position with regard to the trade than it did at present, and he looked forward with confidence that they would find more worthy successors to the post. (No.) He hoped the Association would long continue to thrive and prosper. During the past year several matters had been brought before the Council of the Association relating to various matters, and in some cases the Association had been able to do important service to the trade. He hoped it would long continue to render these services, and in an equally efficient manner. He thought the future of the paper trade was still hanging in the balance, and he only trusted they might find that the intense competition that had arisen from America was only a feature of that peculiar characteristic of the men of the United States, who were always anxious to bluff anyone belonging to another country. He had been over to the States lately, and he did not admire that portion of creation that consisted of the human population of these States to the same extent that they admired themselves. (Laughter.) On the other hand he found Canada as intelligent, loyal, and steady a subject of Her Majesty as it was possible to meet. He hoped that in the future they would be able to knit a stronger bond of union with the members of Canada, and that being accomplished they would be better able to defy competition with the men of the United States. He hoped that next year he would be able to congratulate them on a still further progress, and he thanked them sincerely for the cordial manner they had received the toast.

The toast of "The Press" brought the meeting to a close. The proceedings were enlivened by suitable music interspersed between the speeches.

THE Sebago Power Company, Portland, Me., which was recently organised for the purpose of providing cheaper electric lights, power, etc., has acquired the water privileges at Great Falls, of which many years ago the Indurated Fibre Company and the Union Indurated Fibre Company obtained control with the intention of utilising the power at some future date. The company has a capital of 500,000 dols., and has come into the possession of the deeds covering the flowage lands about Great Falls, and at the same time the titles to the Great Falls property, including the property of the Indurated Fibre Company, the United Fibre Company, etc.

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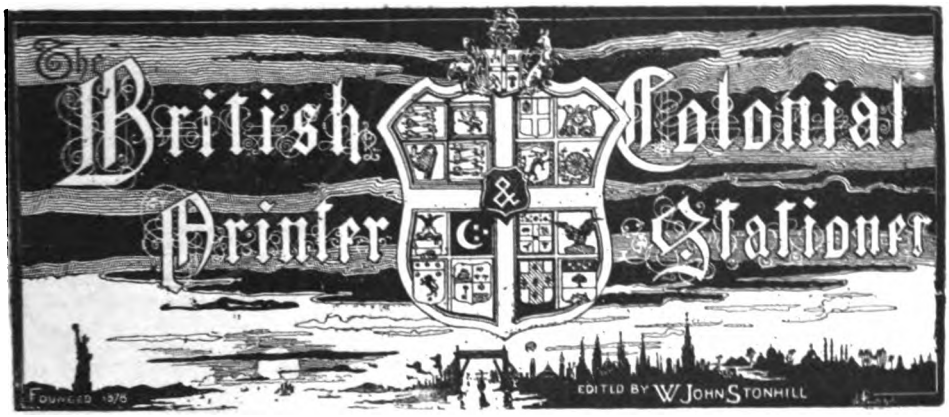

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American Imports & Exports of Paper AND WOOD PULP.

The figures of the imports of paper have grown somewhat in the wrong direction. For the months of December, 1896 and 1897, they are as follows:—

	1896.	1897.
United Kingdom	$53,117	$40,952
Belgium	3,323	2,919
France	15,546	19,428
Germany	113,937	138,528
Other Europe	3,405	5,550
Japan	20,031	17,635
Other countries	2,733	6,847
	$212,092	$231,859

The imports for the twelve months ended December, 1896 and 1897, were as follows:—

	1896.	1897.
United Kingdom	$546,991	$575,441
Belgium	77,277	85,100
France	204,713	212,164
Germany	1,850,982	1,854,108
Other Europe	54,578	59,819
Japan	197,619	193,381
Other countries	33,298	32,872
	$2,965,458	$3,012,885

The importations of wood pulp for December were as follow:—

	1896.	1897.
Germany	$2,404	$7,437
Other Europe	14,123	10,890
British North America ...	47,265	26,548
	$63,792	$44,875

For the twelve months ended December they were:—

	1896.	1897.
Germany	$193,573	$68,012
Other Europe	280,394	157,209
British North America ...	556,747	354,725
	$1,030,714	$579,946

The exports of paper for December were as follows:—

	1896.	1897.
Paper hangings	$5,663	$7,567
Printing paper	*b*	283,681
Writing paper and envelopes	7,241	12,627
All other	253,637	214,467
	$266,541	$518,342

For the twelve months ended December the exports of paper were:—

	1896.	1897.
Paper hangings	$85,035	$149,807
Printing paper	*b*	1,327,227
Writing paper and envelopes	105,992	149,610
All other	2,646,644	2,906,540
	$2,837,671	$4,533,184

b Not stated separately prior to July, 1897.

During December, 1897, wood pulp of the value of 63,132 dols. was exported, and during the calendar year 1897 the exports of wood pulp aggregated 242,186 dols.

The figures as to the exports of paper cannot fail to be gratifying to American manufacturers.

THE

Anglo-German Treaty of Commerce.

It is semi-officially announced at Berlin that the Imperial Diet will be called upon before the close of the present session to devise a "provisional *modus vivendi*" regarding the commercial relations between Great Britain and Germany. The present treaty of commerce, it will be remembered, was denounced last year by the British Government, and expires at the end of July next. In view of this eventuality, says the *Hamburgischer Correspondent*, care must be taken that no interval of time is allowed to elapse during which the commercial relations between the two countries are not regulated by some agreement. There is reason to hope, continues the semi-official organ, that England's own interest in maintaining good commercial relations with Germany will be a guarantee for both the provisional agreement yet to be arranged and the subsequent definite treaty being favourable to German trade. Of special importance it considers the question as to how far the provisional arrangement will affect the commercial relations between Germany and the English colonies. As far as Canada is concerned, the fact has to be reckoned with that on and after August 1, German goods will be excluded from the preferential tariff under which English goods will be imported. And the tariff reduction of 25 per cent. for English goods implies for German and all non-English goods a differential tariff of 33⅓ per cent.

World's Paper Trade Review,
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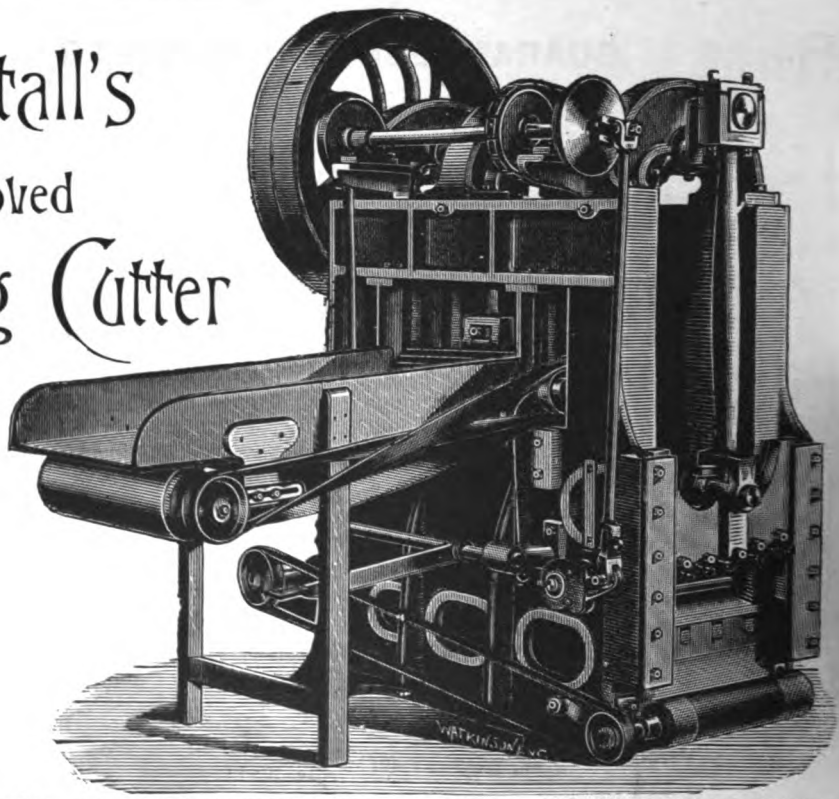

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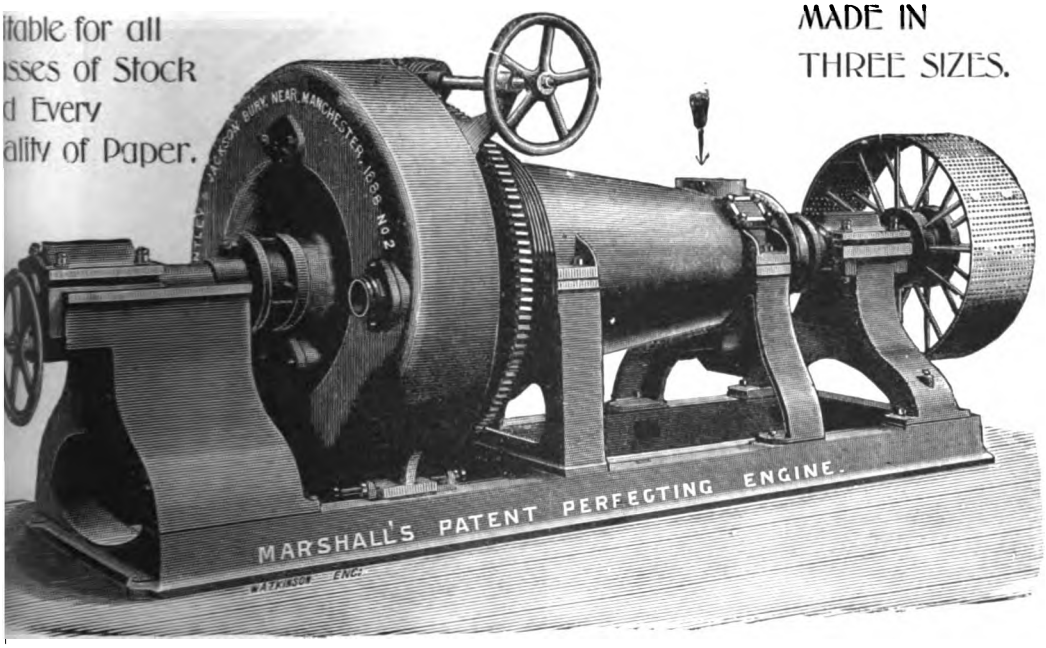

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The Esparto Trade.

Messrs. Ide and Christie, in their March Circular, dated the 15th, report:—During the past four weeks there has been considerable activity in the market, and the business done, when added to that carried through in January and February, sums up a large total. The late transactions, like those previously, have been chiefly in the various grades of African esparto, and the engagements made have again taken the shape of distant, and sometimes very far distant, shipments. One or two large consumers have been prepared to contract over the whole of 1899, and manifested some disappointment when sellers demurred to such far-reaching commitments at to-day's unprecedented prices. Enquiries for Spanish have also been frequent, more particularly for spring and early summer shipment, but as the whole visible supply of first quality is believed to be insufficient for already existing contracts, transactions are confined to the lower grades, which now command very full prices. The imports of all kinds during the past month have been large, but apparently not more than consumers were prepared to receive, for there has been little storing in public warehouses at any of the ports of entry, and few arrived parcels were offered for sale. It will be observed from the statistics given below that the twelve months' record still compares favourably with those of the previous two similar periods. Rates for freight have ruled very moderate, and some cheap boats have been secured by charterers for prompt loading.

Spanish has been a full arrival at the Scotch ports, where every ton was welcome to consumers, some of whom have undergone, and continue to undergo, considerable anxiety in regard to the supply of their enlarged requirements for the next few months. Parcels have again been transported by rail to mill from somewhat distant ports, and it would almost appear as if the inconvenience resulting from a short supply of first quality may be intensified, in some individual cases, before the new crop is ready. This grade is practically unpurchasable, and consumers have been constrained to increase their use of second quality when supplementary supplies of Spanish are required. New crop business is very restricted, but one or two transactions are reported of single cargoes, and for these full prices have been paid. The majority of shippers, however, still profess themselves unable to offer in quantity, or to quote for a series of shipments such as the large consumers desire.

Algerian has likewise been a large arrival, although slightly less than that of February last year. The total of two months' receipts is 17,090 tons, against 14,002 in 1897, and the distribution has been made to every district in the country where this description is used. The market has been quiet in tone, without much change in value, although some single cargoes, with cheap freight, have been sold at slightly lower prices. The dearth of Spanish does not yet appear to have affected the market for Algerian, notwithstanding that so many Scotch consumers of the one are users of the other also.

Tunisian has come to hand almost to as large an extent as in January, and, like the imports of that month, passed at once into consumption on existing contracts. For distant shipments a large business has been concluded, but the prices paid mark a slight recovery in value from the low-water level of previous transactions, and the tone is steadier.

Tripoli receipts have been fairly large, and the two months' arrivals are about the same as last year, 6,012 tons against 6,349. There have been some important enquiries for shipments both near and distant, but all have not resulted in business, owing to the extremely low ideas of value entertained by buyers. Negotiations are a good deal spun out, and the more cautious sellers cannot forbear pausing when asked to commit themselves to a series of shipments which would not *begin* for nearly twelve months.

The following is an official summary of esparto arrivals at all U.K. ports during the past month:—

London	3,213 tons	Bristol ...	480 tons
Liverpool ...	2,237 ,,	Fleetwood ...	1,332 ,,
Glasgow	1,041 ,,	Aberdeen ...	1,894 ,,
Dundee	1,545 ,,	Kirkcaldy ...	180 ,,
Alloa	905 ,,	Grangemouth	515 ,,
Granton	5,593 ,,	Leith	520 ,,
Sunderland ...	1,435 ,,		

These figures give a total of 20,890 tons, including 5,588 tons from Spain; 9,190 tons from Algeria; 2,536 tons from Tunis; 3,547 tons from Tripoli; and 29 tons from West Africa.

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

6677 b	Rotterdam	Bristol	1111 b	Rotterdam	London
11 ,,	Copenhagen	Hull	10191 ,,	Leer	,,
125 ,,	,,	,,	1132 ,,	Rotterdam	Liverpool
2087 ,,	Rotterdam	Manchstr			

MILLBOARDS.

6062 b	Delfzyl	Goole	7075 b	Rotterdam	Hull
4068 ,,	Harlingen	Hull			

WOOD PULP BOARDS.

20 b	Malmo	Grimsby	14 b	Gothenburg	Hull
45 ,,	Christiania	,,	526 ,,	New York	,,
9 c	Hamburg	Leith	200 ,,	Hambro	,,
200 b	,,	London			

CARDBOARDS.

412 b	Terneuzen	London	

PASTEBOARDS.

191 b	New York	Liverpool	468 b	Harlingen	Leith
1 c	Hamburg	Grangmth	32 c	Bremen	London

b—bales. c—cases. r—rolls. cr—crates.

ON Wednesday evening last, March 16th, at the Society of Arts, John-street, Adelphi, London, W.C., a paper on "The Recent History of Papermaking" was read by Mr. Clayton Beadle.

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THE ECONOMICAL USE OF STEAM

IN THE

MANUFACTURE OF PAPER.*

BY CHARLES R. EMERY, PH. D.

A prominent feature of modern industrial progress consists in doing business on a large scale. It has been found possible to greatly increase the size and capacity of single mechanical units, and thereby increase the output and reduce relatively the operating expenses, so that the cost of production has been lowered, the public has obtained lower prices and responded with a larger demand, and, as a rule, the manufacturers' profits depend, much more than formerly, upon the volume of business than a large difference in the cost of production and the net selling price. At first our railway cars were modelled after road carriages, conveying comparatively small loads. The cars were gradually made larger, but the dead weight at first increased in fully as great a ratio, until for years our freight cars carried 20,000 to 22,000 pounds and weighed 18,000 to 20,000 pounds. Now cars are built to carry 40,000, and even 50,000 pounds, upon eight wheels, and the introduction of this principle in coal cars has made it possible to deliver coal at competing points at the rate of one-half a cent per ton per mile. Single blast furnaces, which years ago rarely had an output as high as 10 tons of iron per day, are now built to yield 100 to 120 tons per day. The increased capacity of the railroads was due simply to doing business on a larger scale by the introduction of more power, larger vehicles, and a roadbed amply able to carry them. The increased production of the blast furnace was due to increased size, to the hot blast, and to an increase in the supply of air.

The same progress has been made in paper manufacture. Our first impression of a paper mill is a long, low building, situated on a comparatively small stream, provided with a single paper machine, or, at the most, two, operated at a slow speed, the dryers being heated by steam from a single boiler of small size, and the whole business conducted by the members of one family. They were larger plants on larger streams, but they were practically aggregations of smaller ones. Gradually the output of single machines has been enormously increased both by increase in size and in speed, the latter having been made possible principally by greater facilities for drying the paper, the increase in the number of dryers being the most evident change, like the increased number of blowing engines in connection with the modern blast furnaces. Mechanical details have also been perfected, so that instead of a speed of 100 to 150 feet per minute, it is now found possible to operate at the rate of 500 feet per minute on some classes of work, and obtain an output under favourable circumstances as high as 30 tons per day from a single machine.

The increased output has required a great increase in the steam plant of paper mills, and naturally manufacturers are continually inquiring whether economies cannot be secured in this branch of the business. It may be assumed generally, with perhaps special exceptions, that the incidental uses of steam, such as that required for bleaching, heating the buildings, etc., are independent of steam for power purposes, of small importance in comparison with the quantity of steam required for heating the dryers. It is assumed also that in general water power is available for all preliminary operations, particularly for operating the beating engines, but that it is desirable to operate the paper machine with steam power, which is steadier, while readily permitting desired changes of speed. As it is possible to operate an engine of sufficient power to drive the machine with steam used afterwards to dry the paper, the cost of steam power is substantially proportioned to the quantity of steam required for the dryers, plus 10 to 15 per cent. chargeable to the engines, plus that used for incidental purposes about the mill for bleaching, heating, etc. If, in any case, a steam plant is required to assist the water power, it should be considered independently, though the first cost may be considerably reduced by constructing a single boiler plant and massing the engines at one location.

The speaker is informed that as the paper passes to the dryers it contains about 28 per cent. of solid matter and 72 per cent. of water, and that about 5 per cent. to 9 per cent. of water can be left in the paper after it is apparently dry, as it would absorb that amount from the atmosphere were it made absolutely dry. The latter percentage applies to the solid matter in the paper, and is therefore only about (7 per cent. of 28 per cent.)=2 per cent. of the weight of the original wet fragil web which is conducted to the dryers. It follows, then, that 28 per cent. + 2 per cent. = 30 per cent. of the original weight remains in the finished paper and 72 per cent.—2 per cent.=70 per cent. is in the form of water which must be evaporated. There must, therefore, on this basis, be 70÷30 = 2 1-3 pounds of water evaporated for each pound of paper produced. The evaporation takes place into the atmosphere, and each pound of water evaporated at 212° carries off 212·9 thermal units of sensible heat above the zero Fahrenheit, and 965·7 thermal units in the form of latent heat, so that the total heat above zero carried off is 1,178·6 thermal units per pound of water evaporated. The water of condensation in the dryers should be collected and returned to the boiler at the temperature due to the pressure. For a pressure of 5 pounds above the atmosphere the temperature would be 227·1°. Allowing 2° for loss in transmission the feed water at a temperature of 225·1° would return to the boiler 226·1 ther-

* Paper read before the American Paper and Pulp ciation.

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mal units above zero, so that the heat taken from the boiler per pound of water evaporated would be 1,178·6—226·1=952·5 thermal units, or for each pound of paper produced two and one-third times as much =2,222·5 thermal units.

The absolute calorific value of the best bituminous and semi-bituminous coal is about 15,500 thermal units per pound of dry coal, containing a small percentage of ash. The calorific value of the better kinds of fairly clean commercial anthracite and bituminous coals varies from 13,000 to 14,000 thermal units per pound, or, say, 13,500 thermal units on the average. The calorific value of pea and buckwheat coals varies between 11,000 to 12,000 thermal units per pound, say 11,500 thermal units per pound on the average. The differences in calorific value of different coals are very great, and the proportion of the same that can be utilised in the boiler varies still more. Some of the bituminous coals contain so much volatile matter that the efficiency, or the proportion of the theoretical thermal value which can be utilised in practice, is less than that for coals not so highly bituminous. With grades of coal mentioned as having the highest calorific value, evaporations have been obtained as high as 10 and, in some cases, 11 pounds of water per pound of coal, corresponding to 73 to 75 per cent. efficiency for varying calorific values in the different cases. These results, however, have been obtained under experimental conditions and generally from boilers having very small, thin tubes not adapted for use in a paper mill. Economisers were also used in connection with these boilers. The best practical result which can be hoped for in average practice with commercial coal is about 9 pounds of water per pound of coal evaporated under actual conditions, and, with the cheaper grades of pea and buckwheat coal, only 7½ to 8 pounds evaporated will be obtained on the average. For mills situated near the coal regions, where the cost of transportation is low, the small coal can be employed to advantage, but when the coal is transported a long distance the transportation cost per ton of small coal is as great as that for the larger sizes, and the latter will generally be more economical at a higher price, though the question is one to be settled by the circumstances of each particular case. Assuming that the boiler plant is of a type above the average, that it is well managed, and that a good commercial coal is employed, we may, with hope of doing better under exceptional circumstances, assume an evaporation of 9 pounds of water at a pressure of 80 pounds from the feed water temperature of 225.1° above mentioned. Each pound of steam will then have derived from the fuel 989.8 thermal units, and for each pound of coal there will be utilised nine times this, or 8,908.2 thermal units, corresponding to 66 per cent. efficiency for an average calorific value of 13,500 thermal units, which shows room for improvement, but it is difficult to obtain under the conditions of regular working. As we have already found that 2,222.5 thermal units will be required per pound of paper, on the basis previously assumed there will be 8,908.2÷2,222.5=4.008 pounds of paper dried per pound of coal, or, in round numbers, the drying of each pound of paper would require one-quarter pound of coal if the steam were taken direct from the boilers. Adding one-eighth, or 12½ per cent., as explained hereafter, for the reason that the calorific value of the steam will be reduced by utilising the extra pressure to operate the machine through a steam engine, and again 10 per cent. for incidental uses of steam and transmission losses, the coal consumption should not exceed 0.3094, say five-sixteenths pound for each pound of paper manufactured. If we allow that some exhaust steam from the engine will be wasted at times, there should be at least three pounds of paper manufactured per pound of coal.

(To be continued.)

Boiling Resin Soap.

Fritz Arledter, of Christiania, Norway, has recently received a German patent for a process of preparing a resin soap containing unsaponified resin, to be used especially for sizing papers. According to the letters patent the resin soap for sizing paper is produced under a steam pressure as high as ten atmospheres and a temperature of from 100 to 200 degrees C, and under interrupted rotary and shaking motion of the boiling mass. The steam used for heating the mass does not come in contact with the mixture.

The quantative proportions of the materials and chemicals used in the preparation of the soap, viz., vegetable resin (colophony), caustic soda, caustic potash, or soda and water depend upon the chemical composition of the chemicals mentioned, but there should invariably be an excess of free resin, that is, resin which has not combined with the alkali.

The advantage of this patented process is said to consist in the following: boiling under pressure and under uninterrupted motion of the mass considerably increases the proportion of free, minutely divided resin in the soap; this proportion may be brought as high as 45 per cent. Aside from this the boiling of resin soap by this process is said to necessitate only from 7 to 10 per cent. of alkali, against 10 to 15 per cent. under the process thus far employed.

The results obtained by this process confirm Dr. Wurster's theory that only free resin is effective in sizing paper, for by Arledter's process it is possible to size paper with from 1½ to 2 per cent. of resin, that is to say, only 1½ to 2 pounds of resin are required for sizing 100 pounds of paper. The principal feature of the process consists in the heretofore unattainable high percentage of free resin in finest division, which is obtained by boiling under pressure in closed boilers, and which is said to effect an extraordinary saving as compared with the sizing processes heretofore employed.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

SIR JOHN EVANS was unanimously re-elected vice-chairman of the Herts County Council on Monday last.

C. TOWNSEND HOOK AND CO., LTD.—The annual meeting of the shareholders in this company was held at Snodland on Tuesday last.

MILL FIRE NEAR MARLOW.—On Tuesday morning a fire was discovered at the mills at Bourne-end, near Marlow, owned by the Buckinghamshire Millboard Company. The flames spread rapidly, and great damage was done to buildings and machinery. The cause of the outbreak is unknown.

THE ancient ceremony of pricking the Sheriffs for the various counties of England and Wales has been performed by the Queen, and on Monday, the 7th inst., at Windsor Castle, the name of William B. Huntington, Esq., the Woodlands, Darwen, was pricked as the High Sheriff of Lancashire.

THE directors of the Darwen Paper Mill Co. have accepted the tender of Mr. Robert Shorrock, for the erection of 27 cottages, to be built on their Spring Vale estate. We understand that the work will be proceeded with at once.

UNITED ALKALI CO.—The annual report of the United Alkali Co. was issued on Friday last. It states that the net profit on the working of the year is £213,363. Out of this, the two dividends of 7s. 6d. per share each (or at the rate of 7 per cent. per annum on the preference shares) take £191,174; and it is proposed to carry a balance of £22,188 forward. A further sum of £50,000 has been transferred to the depreciation portion of the reserve fund. The buildings, etc., have been well maintained. Of the retiring directors, Messrs. H. Gaskell, jun., McKechnie, and Worsley, offer themselves for re-election.

THE "WEGENER" SMOKELESS COAL FIRING SYSTEM.—Trials of the "Wegener" system of smokeless coal firing for steam boilers took place on Saturday at the Grand Junction Waterworks pumping station at Hampton, and in response to the invitation of Baron Balluseck, Baron Hardenbroek, and Messrs. Bryan, Donkin and Co., Ltd., a number of press representatives and others attended. The trials of the new system—which is of automatic action—were directed to illustrate its value in economy of consumption and perfection of combustion. It is presented as an improvement upon a previous invention of Herr Wegener, which was tested about two years ago at Bremen. The apparatus has also been much simplified, and the chimney draught alone supplies the required current to admit the powdered coal into the furnace, mixed with the necessary quantity of air, no fan being needed. It can, it is claimed, be easily adapted to any boiler, and there appears to be no difficulty in its management.

PEGAMOID, LTD.—"Accountant," in a letter to the *Financial News*, of March 15th, gives a list of recent "influential" flotations, and a few instances of the loss to the investing public. He includes "Pegamoid ordinary," the capital being £290,000, whilst the present value stands at £145,000, the dead loss being £145,000.

MR. JAMES HAMILTON, paper agent, informs us that he has removed his London office from 235, Upper Thames-street, to 15 and 16, Garlick-hill, where he will occupy offices in the building which was formerly used by the Paper Exchange.

EMPLOYMENT IN THE PAPER TRADE.—According to the labour correspondent of the Board of Trade, employment in the paper trade has remained fairly steady, the percentage of unemployed union members at the end of February being 3·5, compared with 3·0 for January and 2·9 in February last year.

WARREN BROTHERS, LTD.—Registered March 2nd, by Stileman and Co., 16, Southampton-street, Bloomsbury-square, W.C., with a capital of 5,000 in £1 shares. Object, to acquire the business carried on at Bramshott, near Liphook, Hants, and elsewhere, as Warren Brothers, to enter into an agreement with Mrs. M. E. Warren, and to carry on the business of paper bag and box-makers, stationers, printers, publishers, etc. The first directors are Mrs. M. E. Warren, H. I. Stileman, and W. Weeks. Qualification, £10. Remuneration as fixed by the company.

WE are advised that the firm of Messrs. Johnsen and Jorgensen, agents for the sale of wood pulp, have removed their offices from Botolph House, Eastcheap, to larger and more convenient premises, at 4, 5 and 6, Bury-court, St. Mary Axe, London, E.C.

BIRMINGHAM WATERPROOF PAPER CO., LTD.—The creditors of the above named company are required, on or before the 15th day of April next, to send in their names and addresses and the particulars of their debts or claims, to J. Walter G. Hill, of the firm of Abbott Deeley Hill and Co., chartered accountant, of Sun-chambers, 9, Bennett's-hill, Birmingham, the liquidator of the company.

THE CITY AND GUILDS OF LONDON INSTITUTE.—The examinations in technology in connection with the City and Guilds of London Institute will commence on Tuesday, May 3rd.

THE PATENT OFFICE.—The Patent Office, in Southampton-buildings, Chancery-lane, is about to be pulled down, and replaced by a block of specially-designed offices. A large empty warehouse on the other side of Chancery-lane has been leased, and thither the library and documents will be removed in a few weeks' time, arrangements being in progress which will allow of the transfer being made without closing either the library or the search-rooms for a single day.

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DEATH OF MR. THOMAS MACDOUGALL.—Mr. Thomas MacDougall, of Dalhousie Castle, who was managing director of Messrs. Brown and Co., papermakers, Eskmill, Penicuik, died recently after a lingering illness. The deceased gentleman took an active interest in politics, and was chairman of Penicuik and Glencorse Unionist Association for many years. He was a most popular employer, and took a kindly interest in all social movements in the district. On Friday last the remains were interred in Penicuik Churchyard. About 1,000 persons were present in the Parish Church, where a funeral service was conducted by the Rev. W. M. Smith Dorrien, private chaplain to the Duke of Buccleuch, assisted by the Rev. Robert Thomson, parish minister. The coffin was covered with wreaths, amongst others from the workers in Eskmills and the Conservative Association During the funeral the shops in the village were closed, while the mill was also shut down out of respect for the deceased.

THE DEATH is announced of Mrs. Wm. Howard, at Nice. Mrs. Howard was mother of Mr. John Howard, proprietor of the Chartham Paper Mills, and the mills were closed for the funeral, which took place at Nice on the 8th of March.

THE OLDBURY ALKALI CO., LTD.—At an extraordinary general meeting of the company, duly convened and held at the company's works at Oldbury, in the county of Worcester, on the 11th day of February, 1898, and at a subsequent extraordinary general meeting, held at the same place, on the 28th day of February, 1898, the following special resolutions were duly passed and confirmed :—

"That a conditional agreement dated the 10th day of February, 1898, and made between this company of the first part, William Hunt, Edwin Hunt, and Edwin James Hunt of the second part, and James Robinson as trustee for and on behalf of a new company therein mentioned and intended to be incorporated under the name of Chance and Hunt, Ltd., of the third part, for the transfer by this company to Chance and Hunt, Ltd., of the assets, business, and goodwill of this company, with the exceptions in the said agreement mentioned be, and the same is hereby approved and adopted.

"That for the purpose of giving effect to the said agreement, this company be wound up voluntarily under the Companies Acts, 1862 to 1893.

"That Henry Chance, of Thornbridge, Leamington, in the county of Warwick, Alexander Macomb Chance, of Lawnside, Edgbaston, in the same county, and George Ferguson Chance, of Clent Grove, in the county of Worcester, be and they are hereby appointed liquidators for the purposes of such winding up.

"That the liquidators be, and they are hereby authorised, to adopt and carry into effect the said agreement, with such modifications (if any) as may be agreed upon between the liquidators and Chance and Hunt, Ltd., and to execute and do all such assurances, acts, and things as may be necessary or expedient for the purpose of carrying the said agreement into effect, and dividing the consideration to be received thereunder among the shareholders."

INTERNATIONAL ENGINE PATENTS DEVELOPMENTS COMPANY, LTD.—Registered with a nominal capital of £3,750, in 1s. shares. Object, to acquire the assets and liabilities of New and Mayne, Ltd., to enter into an agreement with New and Mayne, Ltd., and D. F. Basden, its liquidator, and to carry on the business of electrical, mechanical, and general engineers, engine builders, and manufacturers of oil, steam, or electrical motors. The first directors are R. Hunt, W. Shrimpton, and A. G. New. Qualification, 500 shares. Remuneration, £300 per annum, divisible. Registered office : 33, St. Swithin's-lane, E.C.

AMMONIA GAS PURIFYING AND ALKALI CO., LTD.—A meeting of the shareholders of the Ammonia Gas Purifying and Alkali Co. was held on Friday, last week, at Winchester House, E.C. The proceedings were private.

EXPORTS OF PAPER HANGINGS.—The following statistics show the exports of paper hangings from Great Britain :—

February	1898	7,703 cwts.	£21,485
,,	1896	7,743 ,,	17,671
,,	1876	7,308 ,,	17,985
Jan.-Feb.	1898	15,064 ,,	40,853
,,	1897	14,711 ,,	35,200
,,	1876	13,789 ,,	34,625

WE are informed that the business of Messrs. Rowe and Co., of Brentford, has been converted into a private limited liability company, under the title of T. B. Rowe and Co., Ltd. No shares are to be offered to the public.

THE Norwegian steamer Sarp has brought 305 rolls, 254 bales, and 31 bundles of paper, and 1,720 bales of wood pulp from Sarpsborg; 1,000 bales of moist wood pulp from Fredrikshald.

WE have received from Messrs. Marchant, Singer and Co., of 47, St. Mary-axe, London, E.C., a copy of their pocket edition of their "Directory of Papermakers." The work in this form is suitable for travellers visiting mills. The contents include an alphabetical list of papermakers, paper enamellers, gummers, etc., papermakers' London representatives, wholesale stationers, mills with the names of the occupiers, and mills arranged in counties, also a numerical list of mills. In addition, the makes of paper are classified with makers' names, trade designations used as watermarks are also given, and the sizes of papers. The price is 2s. 6d. post free, and cases (in calf) can be obtained for 2s. each.

THE PRESERVATION OF DAMP PULP.—The *Holzstoff Zeitung* refers again to this most important question and regrets that so many pulp makers only think of this subject when in consequence of an extra good water supply prices begin to fall. But when orders come in more readily the subject is shelved again. This is a great mistake, a rational working should always provide for any shortcoming of the water supply, and, instead of selling all the production producers would do well, when it is ample, to only sell a certain portion and keep the remainder in reserve. If this caution is neglected the consumers will either buy foreign pulp, or else steam pulp works may be erected, and thus a permanent increase of the production created. It is pointed out that Dr. Klemm, in his lecture last year, has already referred to the means by which damp pulp can be stored. All that is required is that each maker adopts these general principles to his special case and experiments till he has succeeded.

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GERMANY.

THE GERMAN RAG TRADE last year was only moderately successful. The principal buyer of German rags, the American paper trade, was in an unsatisfactory condition. In the previous year there had been overproduction, and moreover, low prices compelled papermakers to use more wood pulp. Jute baggings were scarcely touched by papermakers. Rag prices were so low in America that it scarcely paid to ship from Germany, except perhaps the most expensive grades.

REJECTED NORMAL PAPERS.—This question is discussed again in the *Wochenblatt*. The steadily falling prices of paper compel papermakers constantly to try new ways of economy by blending of cheaper raw materials, and therefore it may happen that some otherwise good paper will fall ever so little short of the prescribed tests. What becomes of it? As the smaller consumer has no means of testing the paper scientifically he may buy it and even find it so good that he gives repetition orders. Would it be fraud to make such papers which would not fully come up to the normal watermark? From the point of view of the authorities, who have each parcel tested, the watermarks must be correct. But who is to guarantee that private consumers always receive the right normal papers if they do not get them tested? Many people are of opinion that it is the duty of the Government to so amend the law that wrong watermarking of normal papers are punished as fraud.

WOOD PULP INDUSTRY IN SAXONY.—The reports about last year agree in calling the year 1897 satisfactory, with increased sales. Prices were mostly the same, but in some cases they were slightly lower, in consequence of competition. Wages were higher. The exportation was great, but at lower prices. The water calamities of last summer caused much damage, as work had to be interrupted for a long time. Workmen were scarce, but boys of 14 may be employed according to law.

ITALY.

THE German Consul reports from Genoa: The total importation of paper and books, which in 1895 had only been 600 tons, value 277,928 lire, rose in 1896 to 1,341 tons of the value of 623,753 lire. Rags were only imported to the extent of 156 tons, of which 10 tons came from England. Of half-stuff and chemical pulp 914 tons were imported. In white paper 25 tons, value 17,757 lire, came mostly from Germany, England and France. In coloured paper Germany participated with 23,157 kilos., Great Britain with 21,343 kilos., France with 6,035 kilos., and Belgium with 2,866 kilos. Of packing paper Germany imported 57,946 kilos., Great Britain 10,935 kilos. Exports of white paper amounted to 2,598 tons, of the value of 2,028,574 lire, which principally went to South America. Of lithographic paper 155 tons were exported to South America and a little to Egypt. Fine cardboard went principally to Great Britain (163 tons) but also a little to South America and Spain. Of cardboard goods 116 tons went principally to South America.

UNITED STATES.

THE NATIONAL ASSOCIATION OF MANUFACTURERS of U.S.A., which held its third annual convention in New York at the end of January, has lately issued several circulars for information on various commercial subjects, copies of which we have received. One of these is the annual report of the Association, which deals largely of course with American trade, its present position and future prospects, and also with the Bureaus of Publicity and Information established in connection with the Association, and the foreign sample warehouses for American goods. These latter are fast becoming an institution in the States, and already embraces a large number of important centres of trade abroad, which will, no doubt, render invaluable aid to those who seek to extend their foreign sales in manufactured articles.

THE AMERICAN PAPER AND PULP ASSOCIATION recently held their annual meeting, which was reported to be a great success, and the officers, who have been deservedly elected to serve for another year, can congratulate themselves upon the result of their efforts to infuse new life into the organisation, which has now more actual members than at any time in its history. The papers read before the meeting were excellent, and were of great value and practical interest to paper and pulp manufacturers. A larger membership is desired.

THE STRAWBOARD MANUFACTURERS' ASSOCIATION have decided to cultivate the English market for their products.

THE plant of the Riverside Paper Manufacturing Company at Glastonbury, Conn., has been totally destroyed by fire. The building was a two-storey frame structure, valued at about 5,000 dols., and, including the damage to the stock and machinery, it is thought the loss will approximate 21,000 dols., with an insurance of about 9,000 dols. The origin of the fire is unknown.

A NEW YORK contemporary states that the United Alkali Company, Bay City, Mich., will immediately begin the erection of a million dollar plant for the manufacture of the lower grades of alkalies. This will give the company two immense plants in Michigan. The first to begin operations will be that at Detroit, the buildings of which are

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nearly completed. The Bay City plant will cover 90 acres, will employ 1,500 men, and will consume the entire product of one coal mine, and the product of sixteen big salt wells. Hundreds of men are applying to the company for work. Every applicant has to furnish recommendations from prominent men, when, if satisfactory, he is placed on the waiting roll. Married men are given preference, and no boys will be hired. The survey for the main building shows that it is to be 650 by 185 feet, two stories high. There will be several other large buildings.

THE exports of paper at New York, according to the latest weekly list, included the following: — To London, 4,607 packages; Liverpool, 751 packages; Manchester, 126 packages; Hull, 227 packages; Aberdeen, 81 packages; and Glasgow, 209 packages. The shipments to Hamburg were 59 packages; Havre, 2 cases; Antwerp, 11 cases; Copenhagen, 5 packages; Australasia, 1,296 packages; Africa, 47 packages; B. W. Indies, 1,603 packages; Brazil, 70 packages; Japan, 97 packages; Mexico, 676 packages; and New Zealand, 141 pkgs. and 154 bundles.

CANADA.

A LARGE quantity of wood pulp has recently been shipped by the Sault Ste. Marie Pulp and Paper Company, Sault Ste. Marie, Ont., to Marseilles, France, where it will be used in the manufacture of artificial silk.

GREAT interest is being manifested throughout Canada in the case of the St. Catherine's Carbide Co., Ltd., and Sunday closing. This is looked upon as a test case, and is the first prosecution of the kind instituted by the Lord's Day Alliance, and the court has been crowded daily by persons interested, as many as eight clergymen being present on one occasion—the general feeling being that if these works are allowed to operate on Sunday, paper mills and other manufactories, the proprietors of which want to increase their output by little or no increase in the dead expense, will very soon follow the same course, especially such as have such splendid water power as those at Merritton.

GUATEMALA.

THE German Consul reports that the importation in the first half of 1896 was as brisk as in the previous years, but the second half fell off partly in consequence of previous over-importation, and partly through financial difficulties, private and Government enterprises having been supported through unsound financing. Firms had to reduce importations, particularly as most of the new enterprises had to be suspended for want of means. Nothing new was undertaken, sellers being satisfied to keep going what business they already had. The falling off referred principally to fancy goods. German capital has been largely interested, particularly in banks and railways, but also in Government loans. Germany has been able to make use of the opportunities, and stands first and foremost in the trade and industry of the Republic of Guatemala. In importations of paper and paper articles Germany has far surpassed the other nations, only a few specialties came from Spain, Italy, Belgium, and the United States. There has been no complaint about the German packing.

Alkali and Bleach.

The following statistics, taken from the official returns, show the quantity and value of alkali and bleaching materials shipped to the countries mentioned for the month of February and for January-February 1898, as compared with 1897:—

ALKALI.

COUNTRY.	FEBRUARY.		JAN.-FEB.	
	1897.	1898.	1897.	1898.
Quantity ...	Cwts.	Cwts.	Cwts.	Cwts.
Russia	8,264	5,735	11,760	12,090
Sweden & Norway	3,584	6,467	6,025	14,565
Germany	4,552	11,033	9,079	18,909
Holland	5,317	9,044	14,062	18,713
France	3,397	3,406	6,243	10,328
Spain & Canaries...	25,158	28,211	52,613	55,010
Italy...	22,514	17,585	36,031	36,555
United States ...	156,099	82,094	333,338	191,631
Australasia ...	18,574	13,854	28,426	20,868
B. N. America ...	2,839	5,132	7,628	11,173
Other Countries ...	79,400	101,552	152,267	220,999
Totals ...	329,668	284,113	657,472	620,844
Value ...	£	£	£	£
Russia	2,064	1,913	3,225	3,969
Sweden & Norway	612	1 566	1,070	3,405
Germany	1,353	2,493	2,538	4,133
Holland	1,130	1,951	3,257	3,792
France	1,261	1,357	2,206	3,715
Spain & Canaries...	7,570	9,295	17,571	18,356
Italy...	7,025	5,371	10,686	10,893
United States ...	35,010	15,528	73,276	36,841
Australasia... ...	5,517	4,185	8,066	9,711
B. N. America ...	597	1,398	1,916	2,899
Other Countries ...	21,377	29,601	42,172	63,389
Totals ...	83,516	74,658	166,005	161,103

BLEACHING POWDER, &c.

Quantity	Cwts.	Cwts.	Cwts.	Cwts.
United States ...	44,003	57,905	107,616	121,009
Other Countries ...	29,438	22,421	59,928	47,325
Totals ...	73,441	80,371	167,544	168,334
Value ...	£	£	£	£
United States ...	14,018	16,892	34,470	34,871
Other Countries ...	9,703	6,957	19,816	15,234
Totals ...	23,721	23,849	54,286	50,105

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FRIDAY, MARCH 18, 1898.

The Papermakers' Association.

The annual meeting and dinner of the Papermakers' Association, held at the Hotel Cecil on Wednesday last, was a highly successful gathering. The meeting, when held in London, certainly attracts a larger attendance than in the north, for instance the muster at Manchester last year was a small one. The northern members, however, are very active supporters of the Association, and they certainly showed their southern brethren that distance had no deterrent effect upon them, as we were glad to see that they were well represented at the Hotel Cecil on Wednesday night. It must certainly be highly encouraging to those members who have so consistently supported the Association to find that to-day it is in a very healthy condition, particularly when we consider that three years ago it was on the verge of collapse. That "Unity is Strength" is again exemplified in no undisguised manner, and with the excellent organisation that now characterises the working arrangements, the officers of the Association deserve the warmest commendation and support. During the past year there has been no startling measure introduced to upset the equilibrium of the paper trade, but the Association has ever been on the alert and a watchful eye is open in order to be equal to any emergency. According to the report, satisfactory arrangements were made in regard to a wood pulp contract note, and considerable attention was given to the code of trade customs. In regard to the Saturday half-holiday question the proposals of the Amalgamated Society of Papermakers were sympathetically considered, but from communication with mill owners it was found that it would be inadvisable to favour the adoption of any hard and fast rule. The Association in the past has done very serviceable work in watching papermakers' interests in the matter of river pollution, and there is no doubt that its action in the future will be still further beneficial to manufacturers. It is on such questions as these that the value of the Association is very apparent, and it therefore deserves the support of the whole trade. Mills—both large and small—may at any time be called upon to face an impediment to their manufacturing operations, as in the case of the Medway Mill, which is engaging the attention of the Council of the Association. Every mill, therefore, should support the organisation, because to reap advantages without some little reciprocation shows a niggard spirit which we trust is not cultivated amongst paper mill owners. A question discussed of some importance was foreign competition. It is pleasing to learn, notwithstanding the increase in imports of foreign paper and a decrease in exports, that the British paper industry is in a healthy state. It was necessary, however, to cope with foreign competition, and a remedy was suggested in acquiring Canadian wood pulp mills. An export duty to be placed on lumber is also thought desirable, as it would no doubt handicap American paper exporters. On this subject a conference is to be arranged with the Canadian Government agent in London. On another page we give the portraits of most of the officers of the Association. Unfortunately the group is not complete, the portraits not coming to hand in time of Mr. Roger Duxbury, the chairman of the Northern Committee, and Mr. George Chater, one of the auditors.

* * *

The Centenary of the Paper Machine.

Although this was not the title of the interesting lecture delivered by Mr. Clayton Beadle to an appreciative audience on Wednesday evening last, at the Society of Arts Rooms, yet the speaker made some apt references to the fact that it is just a century since Robert made his first practical essay at a mechanical papermaking apparatus. For the historical portion of his subject Mr. Beadle expressed himself as largely indebted to the series of articles on

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the "Invention of the Papermaking Machine" that recently appeared in our columns, and which he considered to be the most important that had been published on the subject. The lecturer did not, however, confine himself merely to a review of the past, but dealt to a considerable extent with the present position and future outlook of the industry. He did not have a very high opinion of the utility of the American paper machines put down in this country, but considered that their comparative failure was not due to any mechanical defect, but simply to their environment and conditions of working, which—in a British mill—are very different to those which obtain in the States. Mr. Beadle also had fears that at some future, but probably remote date the supply of timber available for pulp making may give out. It is satisfactory, in this connection, to know that several of the Governments whose territories are more immediately concerned in this question, are making efforts to regulate the supply, and limit or prevent all random destruction. We hope to give a fuller report of this lecture in our next issue.

* * *

River Purification in Lancashire.

On Monday last, the Right Hon. Sir J. T. Hibbert presided at a meeting of the Ribble Joint Committee, at Preston, and delivered an interesting statement on the work of the committee, who, he said, had made considerable progress since 1892. In March of that year there were 40 authorities under the committee; now there were 42. Under the Mersey and Irwell Committee they had 42 local authorities, making a total population under the two committees of 3¼ millions, so that they were dealing with a very large proportion of the population of the county. The authorities without sewage interception schemes in 1892 numbered 14, whereas there were now only six. At that time the number without sewage disposal works of any description was 22, compared with seven at the present moment. Then, there was not a single authority with efficient disposal works; now there were 31. During the year he found only four orders were made against manufacturers, and no penalties were applied for. In conclusion, he mentioned that Mr. Chaplin had informed him that the Government were about to appoint a Royal Commission to consider the question of dealing with sewage and other obnoxious effluents. He (Sir John) thought it most desirable that this matter should be considered, as from year to year it was becoming more difficult to obtain land for sewage purposes.

Stocks and Shares.

Markets have been much more active during the past week, and paper shares have shared in the general sway. East Lancashire still keep advancing, and a rise of a full point is noted in the ord. and of 1¼ in pref., the bonus being also ½ better. These shares seem to have had a great spring, and are bound to come lower in a while. Burnley are enquired for, and have risen ⅛, and the same may be said of North of Ireland, which latter seem to be making up the recent fall. Roach Bridge also are wanted, and are firmer at an advance of ⅛. Star, on the other hand, are offered, and are quoted ⅛ easier. Waterlow and Sons ord. (both classes) are also ¼ each down.

Report received from Mr. F. D. Dean, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
5	5	Hyde Paper Works Co.(Ld.)	nil	1½—2
10	10	Bath Paper Mill Co. ,,	5	11⅛—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	104—106
10	10	do. do. 6% pref.	6	12—13
3½	5	Burnley Paper Co. ,(Ld.)	10	6⅛—6⅜
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref. ,,	6	7⅛—7⅜
2¾	3	Collin (Darwen) Paper ,,	nil	4/6—5/6
3¾	5	Darwen Paper Co. ,,	15	7⅜—8½
10	10	E. Lancashire Paper Co. ,,	nil	7½—7¾
10	10	do. do. 6% pref.	nil	8—8⅛
5	5	do. do. bonus	nil	3½—3¾
4	5	Hartlepool Pulp & Paper,,	10	7—7⅛ c.d.
2¾	5	Kelln'r-Part'g't'n P'p Co,,	15	7⅛—8
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7½—7⅝
7	10	Olive Brothers ,,	10	7½—7¾
5	5	Peebles (A. M.) & Son ,,	8½	7⅛—8½
5	5	do. 5% cum. pref.	5	6¼—6⅜
100	Stock	do. 4½% deb. issued 105	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	6⅜—7¼
1	1	do. do. cum. pref.	5	1¼—1½
4½	5	Roach Bridge Paper Co. ,,	10	5⅛—5⅜
5	5	Star Paper Co.	10	7⅛—7⅜
3	5	do. do. cum. pref.	10	6—6½
1	1	Thomas Owen & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2—2¼
10	10	Waterlow & Sons non.-cum. def.	12	15—15½
10	10	do. do. non.-cum. pref.	12	14½—15
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	8—8¼
10	10	do. do. cum. pref.	7	11—11½
100	100	do. do. debs. (red. 1904)	6	104—106
10	10	Brunner, Mond & Co. (Ld.)	20	41½—41¾
3½	10	do. do. "New" ,,	20	17—17⅛
10	10	do. do. 7% pref. ,,	7	17⅞—18¼
5	10	do. do. do. new issue	7	8¼—8¾
1	1	Castner-Kellner Co. ,,	—	20/6—21/-
5	5	Clayton Aniline cum. pref.	6	5¾—6¼
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11¼—11½
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	1⅝—1¾
10	10	do. do. cum. pref.,,	7	8¾—9
100	Stock	do. mort. deb. (red. after 1901)	5	109—110

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester, Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams

Telegrams—"STONHILL, LONDON."

CHEMICALS.—There is very little movement in the chemical trade generally. The demand for BLEACHING POWDER is somewhat depressed quotations standing at £5 2s. 6d. to £5 5s. for soft wood f.o.r. and hard wood £6 to £6 5s. f.o.b. Liverpool. CAUSTIC SODA, White, 78 per cent. is quoted £8 15s. and 77 per cent. £8 2s. 6d., whilst CAUSTIC BOTTOMS are on offer at £4 10s. to £4 15s. AMMONIA ALKALI, 58 per cent. is firm at £4 5s. to £4 7s. 6d. per ton in bags on rails. ALUM has a slight upward tendency, the quotation for lump in tierces f.a.s. Glasgow being £4 10s. RECOVERED SULPHUR is firm at £4 15s. to £5; and SALT CAKE is offered at 23s. per ton. In Foreign Chemicals HYPO-SULPHITE OF SODA shows a decline at £4 10s.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½%	5 5	0
,, ,, barrels	...	,, ,,	2½%	5 15	0
,, ,, tierces	...	,, Hull	2½%	5 2	6
,, ,, ,,	...	Goole	2½%	5 2	6
,, ,,	...	f.o.b. Glasgow	2½%	5 2	6
Alum Lump) ,,	...	f.o.b. Liverpool	2½%	4 12	6
,, ,, barrels	...	,, ,,	2½%	4 15	0
,, ,, tierces	...	,, Hull	2½%	4 12	6
	...	Goole	2½%	4 12	6
,, ,, ,,	...	London	2½%	5 2	6
,, ,, ,,	...	f.a.s. Glasgow	2½%	4 10	0
Alumina Sulphate	...	f.o.b. Tyne	net	3 12	3
Aluminoferric Cake, slabs		Liverpool ...	...	2 15	0
,, ,, tierces		,, ...	...	3 2	6
Alumina Cake, ... slabs		Glasgow ...	...	2 10	0
Blanc Fixe	...	f.o.b. Tyne	net	6 17	6
Bleach, ...	...	,, ,,	net	6 0	0
,, (soft wood)	...	f.o.r. Lancs.	net	5 5	0
,, (hard wood)	...	f.o.b. Liverpool	net	6 0	0
,, (soft wood)	...	landed London	net	6 5	0
Borax (crystals) ...	...	... ...	net	14 10	0
,, powdered ...	...	... ...	net	15 0	0
Chloride of Barium	...	f.o.b. Tyne	net	6 15	0
Caustic White 76%	...	f.o.b. Liverpool	net	8 15	0
,, 74%	...	,, ,,	net	8 10	0
,, 70%	...	,, ,,	net	7 10	0
,, 70%	...	f.o.r. Lancs.,	net	7 7	6
,, 60%	...	f.o.b. Liverpool	net	6 10	0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5 15	0
,, 60%	...	f.o.b. Liverpool	net	5 17	6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4 12	6
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4 12	6
,, ,, 48%		,,	net	4 7	6
,, ,, 58%		f.o.r. Widnes	net	4 10	0
,, ,, 48%		,, ,,	net	4 5	0
,, Ammonia 58%		f.o.b. Liverpool		4 5	0
,, ,, 48%		,,		4 0	0
,, Caustic 48%		,,		4 12	6
,, ,, 57-58%		,,		4 17	6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5 0	0
,, 10-ton lots		ex ship Liverp'l net		5 5	0
Oxalic Acid	...	f.o.b. Liverpool 2½%		per lb	3
Salt Cake	...	on rail, in bulk		1 2	0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35 0	0
,, (2nds)	...	,,		33 0	0
Soda Crystals ...	...	f.o.b. Tyne	net	2 15	0
,, ,, ...	...	ex ship Thames	2½%	2 15	0
,, ,, ...	...	f.o.b. Liverpool	5%	2 17	6
Sulphur, roll ...	...	f.a.s. works	2½%	6 5	0
,, flowers ...	...	,, ,,	2½%	7 5	0
,, recovered ...		,, ,,	2½%	5 0	0
Sulphate of Ammonia ,,		,, ,,	2½%	9 12	6
,, of Copper ...		,, Liverpool	5%	16 10	0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	4	10	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15	0
Blanc Fixe (c.i.f. London)	...			
White Sugar of Lead	...	24	10	0
Zinc Oxide	...	18	5	0
Bleaching Powder	...	5	15	0

CHEMICAL WOOD PULPS.—Prices for SULPHITE are fairly well maintained, business however is quiet. SODA pulps are steady.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8	12	6	to 9	0	0
,, Superior ,, ...	9	5	0	,, 9	10	0
,, Bleached, ...	11	10	0	,, 15	0	0
SODA, Unbleached, Common ...	8	15	0	,, 8	10	0
,, Extra...	8	15	0	,, 9	5	0
,, Bleached	10	10	0	,, 12	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....		Kr. 16o	
Sulphate, f.o.b.	Kr. 12o	to Kr. 14o	

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.	to 25.	
,, Bleached	31.	,, 36	
SODA, Unbleached	21.50	,, 22.50	
,, Bleached	27.	,, 35.	
SULPHATE, Unbleached	21.50	,, 22.50	
,, Bleached	27.	,, 35.	

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached	$1.62	to 2
SODA Bleached	1.70	2
FOREIGN SODA, Unbleached ...	2.15	2.10
,, Bleached	2.70	2.80c.
,, SULPHITE, Unbleached	2.30	,, 2.75c.
,, ,, Bleached...	3.25	,, 3.30c.

MECHANICAL WOOD PULPS.—The demand for Mechanical Wood Pulp remains quiet; prices are firm with little business passing.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£6	10	0
Pine, Dry	£4	5	0	to 4	12	6
,, Moist	2	2	6	,, 2	7	6
Brown, Dry	4	15	0
,, Moist	2	10	0

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt)

Pine Pulp, 50% moisture. ordinary ...	Frs. 11.	to 12.		
,, ,, fine ...	12.50	,, 13.		
,, dry, ordinary	11.50	,, 11.75		
,, ,, fine	11.75	,, 13.		
Aspen, ,, ,, ...	16.	,, 17.50		
Half-Chemical Brown, 50% moisture	10.50	,, 11.		
,, ,, dry ...	12.50	,, 13.		

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
1250 bales	Halifax		London
30 ,,	,,	Steinhoff and Co	,,
200 ,,	Ghent		,,
85 ,,	Christiania	Alsing and Co	,,
520 ,,	Gothenburg	Bott and Co	,,
160 ,,	,,	W. G. Taylor & Co	,,
5190 ,,	Carlshamn		,,
320 ,,	Gothenburg		,,
19 ,,	Rotterdam		,,
100 ,,	Ghent		,,
1322 ,,	St. John's		,,
8 ,,	Rotterdam		,,

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Quantity	From	Importer	Port
15 bales	Gothenburg	R. L. Lundgren	London
32 ,,	,,	Spicer Bros	,,
68 ,,	,,	Tough and Henderson	,,
272 ,,	,,	H. Pearsall	,,
39 ,,	,,		,,
54 ,,	Rotterdam		,,
26 ,,	,,		,,
433 ,,	Ghent		,,
609 ,,	Hambro		,,
168 ,,	Rotterdam		Liverpool
143 ,,	,,		Hull
570 ,,	Gothenburg		,,
3631 ,,	Christiania		,,
302 ,,	Hango		,,
54 ,,	Stettin		Manchester
3456 ,,	Skein		Preston
2400 ,,	Arendal		,,
5044 ,,	Christiansand		,,
55 ,,	Rotterdam		,,
52 ,,	Copenhagen		,,
400 ,,	Christiansand		,,
845 ,,	Halifax		Glasgow
859 ,,	Philadelphia		,,
2134 ,,	Christiania		Grangemouth
100 ,,	Antwerp		Harwich
3250 ,,	Drammen		Granton
400 ,,	Skien		,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	833 bales	HOLLAND ...	473 bales
CANADA ...	3417 ,,	NORWAY ...	25990 ,,
DENMARK ...	52 ,,	SWEDEN ...	2096 ,,
FINLAND ...	302 ,,	U.S.A.	859 ,,
GERMANY ...	663 ,,		

ESPARTO.—Considerable business has been carried through during the past ten days for distant shipment of African. The sales within the last four or six weeks have been large enough to cause a steadier tone. Buyers are desirous of engaging far into next year but sellers will not follow. Spanish quiet in the absence of old crop supplies, for which high prices would be paid. Only small transactions have taken place in new crop.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—	Fair to Good ...	£4 15 0	to 5 2 6
,,	Fine to Best	5 12 6	,, 5 17 6
Oran—	Fair to Good	2 17 6	,, 3 0 0
,,	First Quality	3 1 3	,, 3 2 6
Tripoli—	Hand-picked	2 17 6	,, 3 0 0
,,	Fair Average	2 12 6	,, 2 15 0
Bona & Philippeville	... ...	3 1 3	,, 3 2 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
425 tons	Aguilas		Glasgow
403 ,,	Bona		Leith
2431 bales	Carthagena		Liverpool
2 tons	,,		,,
2720 bales	Gourin		,,

STRAW.—Prices:

Oat Straw, ... c.i.f. London 40/0; f.o.r Goole.
Wheat ,, ... do. 42/0; do. 47/0
Rye ,, ... do. 52/6: do 52/6

STRAW PULPS.—Steady demand; during the week 51 bales of Straw Pulp from Bremen were landed at London.

Prices, c.i.f. London, Hull or Leith.

German, dry. No. 1 ... ... £14 0
,, No. 2 ... ... £13 0 0

WASTE PAPERS.—Trade is improving; there is a large demand for light browns at 3s. 3d.

Cream Shavings ...	10/0	Small Letters ...	3/0
Fine ,, ...	8/0	Large ,, ...	4/3
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns	3 3
White Waste ...	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/6
Blue Paper	2/0	Strawboard Cuttings	1/3
Crushed News	2/0	Jacquards	2/0

For Export: 2s/- per ton extra.

FOREIGN RAGS.—The reports from abroad state that the market is brisk without alteration in values. The imports at British ports during the week were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
176	Ghent	Hull	369	Boulogne	Goole
180	Copenhagen	,,	4	Calais	,,
102	Rotterdam	,,	46	Antwerp	Grimsby
78	Bremen	,,	20	Rotterdam	,,
40	Bordeaux	,,	6	Hambro	,,
205	Amsterdam	,,	877	Dieppe	,,
49	Harlingen	,,	6	Bremen	Leith
118	Rouen	,,	293	Ghent	,,
13	Salonika	London	46	Amsterdam	,,
1	Hambro	,,	44	Dunkirk	,,
11	Amsterdam	,,	14	Hambro	,,
14	Rouen	,,	157	Bordeaux	Liverpool
29	Gothenburg	,,	68	Constantinople	,,
21	Rotterdam	Goole	51	St. Nazaire	,,
22	Delfzyl	,,	18	Lisbon	,,
147	Hambro	,,	201	Amsterdam	Bristol
174	Antwerp	,,	70	St. Nazaire	Newhvn
120	Amsterdam	,,	83	Jersey	Southamptn
69	Ghent	,,	27	Cherbourg	,,

Totals from Each Country:

BELGIUM ...	778 bales	HOLLAND ...	791 bales
CHANNEL Isles	50 ,,	SWEDEN ...	29 ,,
DENMARK ...	180 ,,	SPAIN ...	18 ,,
FRANCE ...	1704 ,,	TURKEY ...	81 ,,
GERMANY ...	292 ,,		

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope coils)	8/0	Not free from wood	5/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	10/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No. I 6/0; No. II	5/0

STETTIN: C.i.f. Hull Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	8/0
SPF	11/0	CSPFFF	14/0
FF	8/0	CSPFF	10/0
FG	8/6	CFB (Blue)... ...	6/0
FFX	7/0	CFX (Coloured) ...	4/0

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/
,, ,, No. 2	16/0	,, (Dark) ...	3/
,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linen	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
seconds No. 4 ...	8/0	Unbleached Cutt ngs	22/0
prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

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FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/o	Black Cotton ...	2/o
II 15/6; III ...	9/6	Blue Linens... ...	7/o
White Cottons, I ...	15/6	New Light Prints ...	16/o
II 12/o; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ...	3/6	,, Stay ,,	15/o

PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/o	CC (Cotton)	4/o
SPF ,, ...	15/6	Jute I	3/o
FG	10/o	,, II... ,, ...	2/6
LFB	8/o	Rope I... ... ,,	8/o
FF	5/6	,, II ...	6/9

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/o	2nd Canvas ...	7/o
2nd ,, ,, ...	5/6-6/o	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/o
Best Canvas ...	11/o-12/o	Mixed ...	2/6-2/o

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/o
2nd ,, ,, ...	2/6	Rope, Thick	6/o
Blue Cottons... ...	1/3	,, Small	4/6
Coloured ,, ...	1/3		

* ,, at Smyrna and Salonica.

HOME RAGS.—LONDON: There is a moderate demand; prices well maintained.—BRISTOL: Enquiry good; quotations unaltered.—MANCHESTER: A fair trade passing at previous figures.—EDINBURGH and GLASGOW: There is a steady trade and prices have an upward tendency.—DUBLIN: Demand remains steady, especially for White Rags.

LONDON

N. White Cuttings	18/o-22/o	Canvas No. 1 ...	14/o-15/o
Fines (selected) ...	19/6-21/o	,, No. 2 ...	9/6-10/o
,, (good London)	17/o-17/6	,, No. 3	5/o
Outshots (selected) ...	11/o	Mixed Rope ...	3/o-4/o
,, (ordinary) ...	9/o	White Rope ...	3/6-5/o
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/o
Country do. ...	4/o-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/o	Gunny	2/o-2/3

BRISTOL:

Fines	16/o	Clean Canvas	14/o
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/o	Light Prints ...	6/o
Thirds	2/6	Hemp Coil Rope	9/6-10/o
Mixed Bagging... ...	2/6	Tarred Manilla	6/o

MANCHESTER:

Fines	14/o-15/o	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/o
,, (ordinary)	8/6	,, (common)	2/o-2/3
Seconds	4/6-5/o	W. Manilla Rope	7/o-7/6
Thirds	2/o-2/6	Surat Tares... ...	2/6-3/o

EDINBURGH:

Superfines	15/o	Black Cottons ...	2/9
Outshots	12/o	W. Manilla Rope ...	7/o
Mixed Fines...	14/o	Tarred Manilla Rope	5/9
Common Seconds ...	7/o	,, Hemp Rope...	8/o
First do.	10/o	Rope Ends (new) ...	6/o
Prints	5/o	,, ,, (old) ...	4/o
Canvas (best)	15/o	Bagging...	2/3
2nd	8/	,, (clean)...	3/o-4/o

GLASGOW.

Fines	12/6-16/o	Canvas No. 1.	15/o
Blues	4/6	,, No. 2.	10/o
Common Blues... ...	3/3	Manilla Rope	8/o
Bagging	4/o	Tarred Hemp	9/o

DUBLIN.

Whit Cuttings ...	16/o	Mill Bagging	
Fines	9/o	White Manilla ...	
Seconds	3/6	Tarred Hemp	6/
Light Prints	2/6	Rigging	10/
Black do.	1/6	Mixed Ropes ...	

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

STARCH.—Prices are easier; Maize, Crisp, being on offer at £9 5s., and Rice, Special (in chests) at £19.

F.o.r. London, less 2½%

Maize—Crisp, £9 5/-; Pearl, £6 5/-; Powder, £6 15/o Special £14.

Farina—Prime, £11 10/-; B.K.M.F., £13 10/-. Delivered, less 2½%:

Rice—Special (in chests), £19 0/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£15

SIZING.—There is a good demand for Sizing; stocks are low and prices firm.

English Gelatines per cwt.	90/o	to	120/o
Foreign ,, ...	70/o	,,	100/o
Fine Scotch Glues	45/o	,,	60/o
Long Scotch Glues	35/o	,,	40/o
Common Black ,, ...	25/o	,,	28/o
"Town" Glues	32/o	,,	45/o
"Bone" Glues	26/o	,,	30/o
Foreign Glues	28/o	,,	35/o
Bone Size	5/6	,,	10/o
Gelatine Size	6/6	,,	10/o
Dry B.A. Pieces	50/o	,,	55/o
,, English Pieces	35/o	,,	45/o
Wet ,, ,, ...	8/6	,,	9/o
,, Sheep Pieces	3/o	,,	4/o
Buffalo Hide Shavings	32/o	,,	40/o
,, Picker Waste	32/o	,,	35/o

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4/10½	5/-	5/3	5/4½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS.—Moderate business.

Mineral Black ...	cwt.	3/6	PASTE COLOURS with 60% of colour, as follows:		
do. superior ...	,,	4/o			
Pure Ivory Black	,,	12/o	Orange Pulp ...	cwt.	40/o
Ochre	,,	2/3	Golden Yellow Pulp		30/o
French J. C. Ochre	ton	60/o	Lemon ,, ,,	cwt.	30/
Chrome (pure) ...	cwt.	40/o	Prussian Yellow ,,		36/o
Red Oxide	,,	4/6	Green (free of arsenic		26/o
Umber, Devonshire	,,	50/o	Paste Blue, 20% ...		18/o
do. Turkish ...	,,	40/o	,, 33%; 26/o; 45%		45/o
Lamp Black ...	,,	5/o-7/6	Imperial Yellow (dry)		16/o
Ultramarine (pure)		35/o-45/o	(less 2½% d/d)		
Cochineal	lb.	4/9-2/o			

MINERALS.—CHINA CLAY is again in fair request; after some months depression prices are well maintained all round. There is a steady trade being transacted in FRENCH and ITALIAN CHALKS. Enquiry for MINERAL WHITE, SNOWDRIFT, and SATINITE is somewhat limited.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine... ...	28/o	less 2½%;	del. Lancashire...		38/o
Pottery Super.	24/o	,,	,, ...	...	34/o
Ball Seconds ...	20/o	,,	,, ...	...	30/
Seconds	15/o	,,	,, ...	...	25/o
Thirds	11/o	,,	,, ...	...	21/o

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/6 and casks 9/6 per ton extra; delivered Lancashire 38/o to 42/6 (for best papers); f.o.r. London, in casks 45/o per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/o.

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Patent Hardening (2 ton lots) f.o.r. Lancs., £35/o.

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Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, No. 1, 64/o; 2, 52/o; 3, 42/o; 4, 37/6 per ton, according to quality.

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Bauxite, minimum alumina, 60%, 15/4 f.o.b.
Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.
Satinite, £3 to £3 6s. 0d., in casks, f.o.b Liverpool or Manchester.
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Sulphate of Alumina, £4 2|6 to £4 15/- per ton del.
Hydrate of Alumina, £12 10/0.

METALS.—LONDON: COPPER steady; TIN firm; LEAD strong. Tuesday's official closing prices:—

	£ s. d.	£ s. d.
COPPER—		
G.M.B., cash	50 5 0	—50 10 0
,, three months	50 11	3—50 16 3
Tough	53 10 0	—54 0 0
Best selected	54 0 0	—54 10 0
Strong Sheets	61 0 0	—
TIN—		
Fine foreign, cash	64 18 9	—65 3 0
,, three months	65 10 0	—66 9 0
LEAD—		
Spanish..		12 15 0
English...		12 17 6

LIME—The present price is 10/6 per ton f.o.r

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings	£3 0 to £4 0

BALING TWINE.—Prices:

	1 nick.	Medium.	Fine
Hemp ...	4d. per lb.	4¼d. per lb	5d. per
Mixed ...	3½d. ..	4d. ..	4¼d. ,

NEW PATENTS.

APPLICATIONS.

4,945. Improvements in settling and recovery apparatus for paper and pulp manufacture. W. Curtis.
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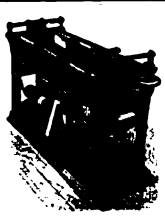

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Sulphite Waste Liquor.

The annual reports of the Imperial Technological Industrial Museum of Vienna, Austria, for 1897, contains a communication from Dr. Heinrich Seidel of that Institute, relating the results of his investigations regarding sulphite waste liquor, supplementing similar investigations made by him, together with Dr. Ulzer in 1896, and reported in the "Reports" of that year. The waste liquor of a certain fibre mill in Silesia, which works according to the Ritter-Kellner process, was of a dark brown colour and differed even in odour from the sulphite waste liquor of another mill in Lower Austria. The darker colour of the waste liquor of the Silesian mill is explained by the more protracted boiling, the higher temperature and the greater pressure employed in the boiling.

The specific weight at 17·5 degrees centigrade was 1,050; the dry residue from 100 cubic centimeters, dried at 100 degrees centigrade, was 12,013 grains or 11.44 per cent. of the weight of the liquor. The weight of the raw ashes was 11.27 per cent. of the dry residue, and the weight of the "sulphate ash" (obtained by evaporating the raw ashes with sulphuric acid and subsequent calcining) was 13.7 per cent., the free sulphurous acid amounting to 0.0643 per cent., and the total sulphurous acid to 0·138 per cent. of the weight of the liquor. The amount of free sulphurous acid was determined by diluting 100 cubic centimeters of waste liquor to a volume of 200 cubic centimeters, and then distilling one-half of the liquid while introducing into it carbonic acid free from sulphide of hydrogen; the distillate was allowed to flow into bromic acid cooled with ice. To determine the total percentage of sulphurous acid, the liquors, as above stated, were heated with dilute hydrochloric acid.

That in this way all of the free and fixed sulphurous acid is really eliminated from the liquor was proved by taking some liquor, which had been boiled once with hydrochloric acid, and again diluting it to 200 cubic centimeters, and then treating it again with hydrochloric acid, as described. The sulphuric-hydrochloric acid liquid, from which the bromic acid had later been eliminated, was clouded only to a hardly perceptible degree by treatment with chloride of barium.

Stress being laid by many on the value of sulphite waste liquor as a fertiliser because of the potassium salts contained in it, Dr. Seidel determined the percentage of potash. He found that 47 grams of dry residue furnished 0.040 gram of chloroplortinate of potassium or 0.016 per cent. of potash (K_2O), that is to say there is one gram of protoxide of potassium in 62 liters of sulphite waste liquor, aside from about 700 grams of other solid matter. Treatment of the liquor with dilute sulphuric acid gave a yellow distillate, on which small drops of oil floated. The distillate was acidified with sulphuric acid and then treated with ether. The evaporation of the ether left a not inconsiderable quantity of a substance of the odour of turpentine behind heat.

An experiment to the dry residuum with lime in a smelting tube to 130 degrees centigrade produced a substance which either is vanilline, or approaches very near it.

Seidel then proceeds to relate his experiments regarding the composition of Ekman's dextron, which formed 47.02 per cent. of the total residuum of the waste liquor examined by him. It will suffice to say here that Seidel found dextron, which had been purified as much as possible, to be composed as follows: Carbon (C), 56.27 per cent.; hydrogen (H), 5.87 per cent.; sulphur (S), 5.52 per cent., calculated as free from ash.

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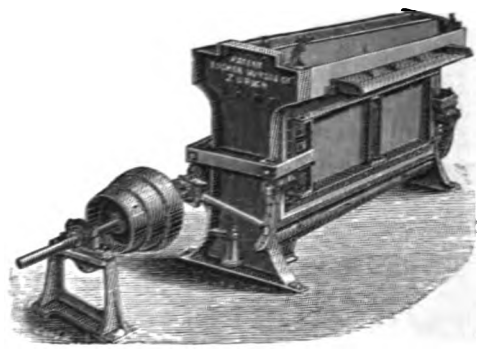

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FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	94	—	—
BELGIUM	1018	4	—
DENMARK	931	—	—
FRANCE	775	95	—
FINLAND	185	—	—
GERMANY	1853	15	—
HOLLAND	16494	7	6
NORWAY	2374	—	—
SWEDEN	4013	—	—
U.S.A.	1104	94	481

Including the Following:—

Quantity	From	Importer	Port
124 bales	Christiania	Alsing & Co	Grangemouth
24 ,,	,,	F. Claydon & Co	London
6 ,,	,,	W. B. Bott & Co	,,
43 ,,	,,	C. Morgan & Co	,,
112 ,,	,,	Alsing & Co	,,
46 ,,	,,	Cookson MacDonald & Co	,,
12 ,,	Copenhagen	Morgan & Co	,,
41 ,,	,,	Crippe & Sons	,,
8 ,,	,,	Spicer & Son	,,
14 ,,	Drammen	Cookson McDonald & Co	,,
13 ,,	,,	H. Puckert & Co	,,
241 ,,	,,	L. Henie	,,
58 ,,	,,	Hernu, Peron & Co	,,
628 ,,	,,	Alsing & Co	,,
47 ,,	Danzig	Becker & Wagner	,,
14 ,,	,,	J. Lindsay	,,
25 ,,	Gothenburg	Schenkenwald & Co	,,
21 ,,	,,	R. L. Lundgren	,,
100 ,,	,,	J. Eberstein	,,
20 ,,	,,	Davies & Royle	,,
151 ,,	,,	H. Reed & Co	,,
32 ,,	,,	Alsing & Co	,,
359 ,,	,,	Schenkenwald & Co	,,
38 ,,	,,	Grosvenor, Chater & Co	,,
179 ,,	,,	R. L. Lundgren	,,
12 ,,	,,	S. H. Holman	,,
6 ,,	,,	F. Claydon & Co	,,
25 ,,	,,	E. Saunders & Son	,,
1131 ,,	,,	J. Eberstein	,,
11 ,,	,,	Skarbiacka	,,
11 ,,	,,	J. Hamilton	,,
12 ,,	New York	Hunt, Fourdrinier	,,
36 cases	Philadelphia	Dickinson & Co	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	4083	17423	2381
ARGENTINE	46	25	143
AFRICA	2	73	—
BELGIUM	87	19	91
B. W. INDIES	—	2	—
B. GUIANA...	28	—	—
CAPE COLONY	147	200	66
CANADA	129	8	—
CHINA	24	404	160
DENMARK	—	—	6
EGYPT	—	6	—
FRANCE	401	169	406
FIJI	25	—	—
GERMANY...	—	—	20
GIBRALTAR	—	—	10
HOLLAND...	19	—	123
INDIA...	327	473	188
JAPAN	72	39	53
MALTA	—	3	2

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
NEW ZEALAND ...	213	136	499
PORTUGAL	8	24	—
SPAIN...	—	—	27
S. SETTLEMENTS ...	—	6	—
SWEDEN	—	—	18
U.S.A.	—	4	11
W. INDIA	34	11	—

FROM GLASGOW.

	Printings. Cwts.	Writings. Cwts.	Various Cwts
CANADA	44	—	31
HOLLAND	—	—	18
U.S.A.	—	8	—

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Quantity	From	Importer	Port
19 cases	Antwerp	Sheldon and Co	New York
3 ,,	,,	Borgfeldt & Co	,,
15 ,,	Bremen	R. F. Lang	,,
1 ,,	,,	Wicke and Co	,,
15 ,,	,,	E. Majert	,,
3 ,,	,,	R. F. Lang	,,
50 ,,	Hamburg	Dingelstedt and Co	,,
105 bales	,,	Lindermeyr and Sons	,,
3 cases	,,	Meyer and Co	,,
21 ,,	,,	Knauth, Nachod & Co	,,
3 ,,	,,	Stiner and Co	,,
1 ,,	,,	De Jonge and Co	,,
1 ,,	,,	Hymann and Co	,,
38 ,,	,,	Stone and Downer	Boston
44 bales	,,	To order	Philadelphia
8 cases	London	Dickinson and Co	New York
23 ,,	Liverpool	E. J. Riley	,,
8 ,,	,,	B. and O. Meyer	,,
8 bales	,,	Dennison Mfg. Co	Boston
1 cases	,,	Gregory and Brown	,,

MANILLAS.

88 bales	Hamburg	Salomon Bros	New York
128 ,,	London	Ralli Bros	,,
249 coils	Liverpool	H. Dutton and Co	Boston
594 bales	,,	Butterworth and Co	,,

RAGS.

205 bales	Antwerp	A. Katzenstein	New York
647 ,,	,,	J. Pirnie	,,
52 ,,	,,	Salomon and Co	,,
284 ,,	,,	Castle and Gotheil	,,
40 ,,	Hamburg	Jessup & Moore	,,
163 ,,	,,	Salomon and Co	,,
85 ,,	,,	A. Kazenstein	,,
21 ,,	,,	Lewy Bros	,,
120 ,,	,,	Salomon Bros	,,
62 ,,	,,	,,	Boston
217 ,,	Hull	Train, Smith & Co	New York
283 ,,	,,	Butterworth and Co	Boston
474 ,,	,,	Dutton and Co	,,
50 ,,	,,	Warren and Co	,,
80 ,,	,,	King and Co	,,
22 ,,	London	Train, Smith and Co	N. York
80 ,,	,,	Castle and Gottheil	,,
50 ,,	Liverpool	B. P. True	Boston
1950 ,,	Yokohama	Delecamp and Co	New York

WASTE PAPERS.

46 bales	London	Darmstadt and Scott	N. York
106 ,,	Liverpool	E. P. True	Boston

BLEACHING POWDER.

92 cks.	Antwerp	Klipstein and Co	New York
90 ,,	Hull	Fuerst Bros	Boston
25 ,,	Hamburg	Roessler & Hasslacher	,,
100 drums	,,	,,	,,
570 ,,	Liverpool	J. L. and D. S. Riker	,,
40 ,,	,,	J. Marble	,,
50 ,,	,,	Reed, Halliday & Co	N. York
346 ,,	,,	J. L. & D. S. Riker	,,
83 cks.	,,	To order	Philadelphia
30 ,,	,,	J. L. & D. S. Riker	,,
25 ,,	Newcastle	,,	New York

CAUSTIC SODA.

100 drums	Liverpool	Hill's Son & Co	New York
170 cks.	,,	,,	Boston
200 drums	,,	,,	,,

SODA ASH.

35 cks.	Liverpool	Churchman & Co	New York
15 ,,	,,	Wing and Evans	,,
240 bgs.	,,	,,	Boston
83 tcs.	,,	,,	,,
23 cks.	,,	,,	,,

SIZING.

Quantity	From	Importer	Port
57 bgs.	Liverpool	Train, Smith & Co	Boston
138 ,,	,,	Butterworth and Co	,,

WOOD FIBRE.

350 bales	Hull	F. Bertuch and Co	Boston

SULPHUR.

334 bgs.	Liverpool	Linder & Meyer	Boston

CHINA CLAY.

100 cks.	Liverpool	Morey and Co	Philadelphia
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300 ,,	,,	Dunn Bros	,,
95 ,,	,,	Morey and Co	,,

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First—that this mucilage causes substances—however dissimilar in nature or texture—to adhere, simply by using the mucilage hot.

Second—paper that is coated with this mucilage can be made to adhere to any kind of material by simply damping the coating of mucilage, and then passing a heated iron over the paper to soften the mucilage, when the paper will adhere with an adamantine fixation.

It is well known that tinfoil paper will not adhere to metallic lead foil, such as is used for wrapping up tea in, by means of gum, dextrine, or paste, all of which cements are liable to decomposition and cause the tea to become musty or mildewed; and also paper so coated readily peels off the metallic cover, while there is a great waste of time incurred in waiting for the printed paper to dry on the lead foil. Now, by the use of this special mucilage all these drawbacks are prevented, because the tinfoil paper when coated with this mucilage needs only to be just damped by passing a sponge over it, then laying the tinfoil paper on the metallic lead foil, and passing the two sheets between heated metal cylinders, when the paper and lead are firmly cemented together, and are ready at once to be used for packing up tea.

Another use for which this mucilage is available is for coating labels that are required for putting on jars of jam, potted meat, etc. Flour paste is the only agglutinant at present available, but some pasted labels can only be affixed to the jars and tins when they have become *cold*, and as a consequence a considerable time is wasted waiting for such cooling, whereas if the labels were coated with this special mucilage they could be at once placed on the hot jars of jam or tins of potted meat, and the heat would cause the mucilage to soften and firmly fix the labels to the jar or tin.

Another use to which the mucilage could be applied is in putting on wall papers. If some papers were coated with it, all the paperhanger would have to do would be to cut the paper into the required lengths, hold it up against the wall and pass a hot iron over it, when the wall paper would at once adhere—whatever be the nature of the wall, brick, plaster, wood, etc.—and as a consequence he need not waste his time in pasting the paper with flour paste. As this special mucilage will unite any kind of substance, it is useful in fixing leather to cardboard and other materials, and therefore it is well adapted for bookbinders' use.

The inventor, Mr. Standage, of Erdington, Birmingham, will send samples to anyone who has a prospect of turning the mucilage to account.

LIVERPOOL PRINTING and STATIONERY CO. Limited.

Incorporated in 1864.

Notice is given that a meeting of the company will be held at London, on the 5th April, for the purpose of having an account laid before the company, showing the manner in which the winding up has been conducted and the property of the company disposed of, and of hearing any explanation that may be given by the liquidators.

HUNTS COUNTY NEWS, Ltd.

(In Liquidation.)

Notice is given that a meeting of the *Hunts County News*, Limited (in liquidation), will be held at Huntingdon, on the 16th April, for the purpose of having laid before the meeting the account of the liquidator, showing the manner in which the winding up has been conducted and the property of the company disposed of, and of hearing an explanation thereof given by the liquidator.

NEW ENVELOPE WRAPPER.—Messrs. F. W. Potter and Co., Ltd., 11, Wormwood-street, E.C., have introduced a new form of wrapper for newspapers, music, prints, etc. It has two rows of perforations running across its width, and can be instantaneously opened by simply pulling a tab that is cut on one edge. The contents are thus not damaged, and run no risk of being torn by roughly tearing open.

THAT useful annual volume, "Willing's British and Irish Press Guide," again makes its appearance. The issue for the current year, which is the twenty-fifth of its publication, has been carefully revised, and forms a concise and complete reference book to the papers published in the United Kingdom. The publishing office of the "Press Guide" is at 162, Piccadilly, W.

WE are informed that the highest award and gold medal has been obtained for the "Trusty" oil engine, at the Queensland International Exhibition, held at Brisbane.

MR. J. C. MILLBOURN, who is leaving Dartford to take up the management of a paper mill in Devon, has been presented with a diamond ring and an illuminated address by his Dartford friends.

THE NAVY AND ARMY LIBRARY, published by George Newnes, Ltd., in sixpenny monthly parts is beautifully got up, the current volume being "Wellington and Waterloo," by Viscount Wolseley. The illustrations are excellent specimens of half-tone work, and are admirably printed.

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PEMBROKESHIRE.

FOR SALE, BY PRIVATE TREATY,

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known as

The Prendergast Paper Mills,

together with a

DWELLING HOUSE,

Garden and Out-premises, Orchard and Hayguard, also a Field adjoining containing 4 a. 1 r. 30. p., all held under a Lease for 21 years dated 20th August, 1894, at a Rent of £80 per annum free of tithe. The said Lease contains a clause enabling the Lessee to purchase the Freehold for the sum of £1,000.

The Mills contain all the requisite Machinery for Paper-making, and there is a plentiful supply of water from the River Cleddaw.

For further particulars and to treat apply to Messrs. T. Rule, Owen and Son, Estate Agents and Valuers, Haverfordwest; or to Messrs. Eaton, Evans and Williams, Solicitors, Haverfordwest. 3116

SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each Line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

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MANAGER Wanted, by one of the largest mills making News and Printings. The Directors are willing to give a good salary to a really competent and experienced man.—Apply by letter in the first instance, to Chairman, No. 7,227, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 7227

Situations Wanted.

MANAGER.—An Experienced Manager will shortly be open to a fe engagement. Thoroughly practical and accustomed to entire control. Twenty years' experience in the manufacture of papers from esparto, rags, and wood pulp. Age 44. Active and energetic. Highest references to present and past employers.—Address, No. 7,142, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7142

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Miscellaneous.

A FIRM dealing with Papermakers are open for an additional First Class AGENCY.—Address, No. 7,223, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7223

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

WANTED, a small dis-used Paper Mill in or near London.—Apply to C. E. Kent, Esq., Throgmorton House, Copthall Avenue, E.C. 7231

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PAPER AGENT,

Has removed from 235, Upper Thames Street to the premises formerly occupied by the Paper Exchange at

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Or Book of the Trade Marks of the Chemical and Mechanical Wood Pulp Mills in Sweden and Norway.

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These Books not only contain the Shipping Marks of each Mill, but give also full particulars about their Names, Owners, and Production; they should therefore prove Most Useful Guides to anyone connected with the Pulp Industry in Scandinavia.

Can also be had in One Volume, uniform with above, and in the ENGLISH LANGUAGE for 15/- net and post free.

Special Supplementary Lists of the New Mills started to the end of 1897 are now included.

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& STRAW PULPS,

Bleached and Unbleached,
All Qualities and all Processes

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Commercial Intelligence.

Re HUBBARD and CO., Ltd., Printers, and Cardboard Box Manufacturers.

This company was formed in November, 1895, to acquire and take over a business of printers and cardboard box manufacturers, carried on at Commercial-road, E., by Messrs. Calder, Taylor and Clare, trading as Hubbard and Co. A winding-up order was made on the 2nd February upon a creditor's petition, and on Thursday, March 3rd, the statutory meetings of the creditors and shareholders were held at the Carey-street offices of the Board of Trade, Lincoln's Inn-fields, before Mr. A. S. Cully, assistant official receiver. Having called over the proofs that had been tendered, the Chairman said the statement of affairs had only just been lodged in draft; and the usual summary of accounts, together with the official receiver's observations upon the case, would be printed and circulated as soon as possible. The company was registered with a capital of £3,000, in £1 shares, 12 of which were founders' shares. It was stated that the real object in forming the company was to adjust the rights of the partners in the business with a view to a dissolution being effected. Messrs. Cauldfield and Taylor were, under the Articles of Association, appointed directors at a salary of £150 per annum each, with any further sum that the company might allow to them in general meeting. Those two gentlemen were to remain in office so long as they retained a holding of 500 shares in the company. The consideration for the transfer of the stock, goodwill, plant and machinery was fixed at £3,713, payable as to £720 in debentures, and the balance in ordinary shares and founders' shares. The purchase price was apparently based upon a balance-sheet prepared at that time, and upon the amount of capital which had been invested by the partners, allowing about £800 for the value of the goodwill of the business. He had not seen that balance-sheet, but it was apparently made up to the 30th September, 1895, and according to that document the business was then solvent, and just about paying its way. The purchase was carried out and the whole of the shares, with the exception of seven, taken by the signatories to the Memorandum of Association, were issued to the vendors as follows, viz.:—Mr. Calder, 1,441 ordinary and 6 founders' shares, and Mr. Taylor, 1,540 ordinary and 6 founders' shares. The 7 signatories' shares made up the total to £3,000. Debentures were allotted in agreed proportions to the respective vendors. The books of the company had been very badly kept. A balance sheet was made up to the 30th September, 1896—12 months from the previous sheet—and that, with the profit and loss account, showed that a profit had been made. A dividend of 5 per cent. was paid on the strength of that profit. It was not paid in cash, as the company had no spare funds in hand at the time, but in debentures covering the assets of the company, and it was paid to the vendors, they being the only shareholders. That balance sheet would require some investigation, because he (chairman) found that the profit was arrived at by estimating the value of the goodwill at £2,150. He had not seen the last balance sheet, but he was informed by the directors that in that document the goodwill was only returned at a value of £800, and he therefore failed to see how the increase from that sum to £2,150 within 12 months could be justified. That matter would have to be closely inquired into by the liquidator, as would the considerable increase of value placed upon the lithographic stones during the same period. That balance sheet of September, 1896, was certified by Mr. H. G. Davis, chartered accountant, who would doubtless explain upon what facts he based the increased values. A debenture action had been commenced prior to the winding up order, and the business was being carried on by a receiver appointed on behalf of the debenture holders. An order had been made for the sale of the business, and an application would shortly come before the Court as to the course to be pursued in conducting that sale. The draft statement showed unsecured debts, £751 0s. 3d.; loans on debentures, £1,110; and preferential claims, £43; making a total of £1,904 0s. 3d. The assets on the other hand were valued at £1,597 12s. 7d., and consisted of stock-in-trade, £75; machinery, £350; insurance money in Court, £962 10s.; good book debts, £165; doubtful debts, estimated to produce £29; and bills of exchange, £15 18s. 4d. The deficiency to the creditors was consequently returned at £306 7s. 8d., and the total deficiency to the contributories was £3,306 7s. 8d. The item of insurance money perhaps needed a little explanation. It appeared that there had been a fire at the works, and the amount was received from the Insurance Co. in the shape of compensation. It had been paid into Court and would be available as against the debenture bonds. A private meeting was held just before the winding-up order was made, at which there was a project put forward of coming to an arrangement under which the debenture holders would be paid and the business continued. Under those circumstances, and acting upon the request of the principal creditors, the official receiver caused a valuation of the stock and machinery to be made by Mr. Bowen, a member of a firm well known in the printing trade. That gentleman estimated that the whole of the stock and plant, if sold as a going concern, would be worth £1,000; if sold as a going concern, but removing the plant for the purposes of repairing the

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premises after the fire, £750; and if sold by public auction, £350. It was, therefore, most material that the sale should be conducted under the best possible conditions, and he would suggest that it should be first offered for sale by tender. That, however, would be a matter for the Court to decide, but the liquidator would have the right of appearing on the application and making any suggestion that he might deem to be in the interests of the creditors and shareholders. It altogether depended upon the way that the business was sold whether there would be any surplus for the unsecured creditors. Under an auction sale the probability was extremely remote, but by means of a valuation or tender there might be a decent sum for division among the creditors. He had already referred to the debenture issue as a matter calling for inquiry. It might be that during the course of the debenture action the Court would hold that some of the bonds had been illegally issued, in which case there would be all the more for the trade creditors. Of course, it must be perfectly understood that he proffered no opinion on the validity of the bonds, because that was a matter for the judgment of the Court. No proper deficiency account had yet been prepared, the excuse given being that the books were not properly written up, but it was the duty of the directors and officials of the company to file that account, and he hoped that it would be completed with the least possible delay. The business of the meeting was to decide as to the desirability of appointing a liquidator in the place of the official receiver, and to elect a committee of inspection to assist with the liquidation. It appeared that some of the principal creditors had not lodged their proofs of debt, and as they were desirous of appointing their own liquidator, a request was made for the meeting to be adjourned. The Chairman said he was entirely in the hands of the creditors, but he must point out that an order for sale had already been made, and the question of the course to be pursued would have to be dealt with in a few days. It was somewhat important that the creditors and shareholders should be represented at that sitting, and that could best be done by at once selecting their liquidator, who would have full powers to deal with the question at issue. A representative of Messrs. Horsell and Co. (Leeds) said his firm did not receive their form of proof in time to prepare and file it for use at that meeting. They wished to nominate Mr. T. P. Child, chartered accountant, 42, Poultry, for the post of liquidator, and therefore asked for the meeting to be adjourned. Mr. Taylor, speaking on his own account and for various creditors, advocated the appointment of Mr. Leonard Warmington; whilst another section of the meeting expressed a wish for the official receiver to retain the office. Mr. Gibbs (Spencer Gibbs and Son) said the appointment to settle the mode of sale could doubtless be adjourned if that course would benefit the estate. It was an open question, however, whether delay would not prejudice rather than benefit the sale. He had seen Mr. Bowen, who, although he had valued the assets at £1,000 on the basis of a going concern, had expressed an opinion that such a sum was not very likely to be obtained. He further understood that there was no goodwill attaching to the printing branch of the business, but there might be some value in the other department. It had been suggested to break up the printing branch, and sell the cardboard box department as a going concern, but personally, he (Mr. Gibbs) was in favour of disposing of the business *en bloc*. Mr. Taylor stated that as his services had been dispensed with by order of the receiver in charge for the debenture holders, he was unable to take any part in the preparation of the accounts required by the official receiver. The Chairman pointed out that the severance of his connection of the business did not relieve Mr. Taylor of his responsibilities. As a past officer or director he had to prepare a separate statement of affairs, or concur in that submitted by his late colleagues. Mr. Taylor said he of course would endeavour to comply with the requirements of the Court. He expressed a hope that the Chairman would not allow the business to be sacrificed by the debenture holders, but that it would be offered to all the parties interested in the company. He personally had heard of one or two probable purchasers, and there were others who would be perfectly willing to tender for the property. It was to the interest of the creditors that the effects should not be allowed to be sold at "scrap iron" price, but that everyone should be allowed to have a chance of bidding for them. The Chairman promised that due notice should be given of the sale, and that everyone interested in the company should receive a tender form. He pointed out that it would be to the interest of all concerned to obtain the highest possible price for the business. After some further discussion the meeting of creditors was adjourned for a week. A resolution was moved at the shareholders' meeting for the official receiver to act as liquidator. Mr. Taylor proposed that Mr. L. Warmington should fill the office, and there being a difference of opinion on the subject, the chairman intimated that he would report the facts to the Court in due course. The appointment would be made later by the Registrar. A committee of inspection, consisting of Messrs. Runciman, Cauldfield, and Taylor, was elected, and the proceedings then terminated. Appended is a list of the principal creditors, viz.:—

UNSECURED.

Arlidge and Son, Northampton	£12
C. R. Brown, 40, Sun-street, Finsbury	19
Cash and Clare, Moor-lane, E.C.	25
Furnival and Co., Reddish	17
E. Hanff, Pentonville-road, N.	43

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Hobbs Manufacturing Co., 37, Featherstone-street	£30
Horsell and Co., Leeds	112
Emil Jagenberg, Dusseldorf...	34
Reineman, Guttman and Co., Aldermanbury ...	19
W. J. Schmaltz, Featherstone-street	75
Smith and McLaurin, Farringdon-avenue, E.C.	101
Spicer and Son, Upper Thames-street, E.C. ...	20
Theodor Schroeder, 58, City-road	46
J. C. Simmons, Ltd., Upper Thames street, E.C.	25
Spencer, Gibson and Co., Cheapside, E.C. ...	50
Weibel and Co., Brussels	57

DEBENTURE HOLDERS.

T. E. Clare, Barnes	650
W. Y. Calder, Wanstead	250
Cailson, —, Hackney	40
W. Bannell, Peckham...	10
J. M. Hubbard, Dorking	50
C. O. Newman, 28, Martin's-lane, E.C.	100
H. R. Taylor, Hackney	10
Sly Dibble and Co., Cable-street, E.	20
Notard and Low, Commercial-street, E.... ...	23

The adjourned meetings of the creditors and shareholders were held on the 10th inst., before Mr. Cully, assistant receiver. Mr. Piesse again attended for creditors, and Mr. Gibson for the debenture holders. The Chairman reported that they were in no better position than on the former occasion. An application for leave to sell the property had been heard, and stood adjourned until the following day. A conditional agreement had been entered into by Mr. Saxon, the receiver for the debenture holders, to sell for £600 the whole of the assets, with the exception of the stock, which was to be taken at a valuation. The arrangement included the book debts, but he (Chairman) had no information before him as to the amount of those debts. He assumed that a good many had been collected by the receiver since entering into possession. The matter had been before the registrar, and in the meantime the official receiver had consulted some of the principal creditors as to their views, and found that they were very much averse to the offer being accepted. It was open to the meeting to express their opinion upon the offer. A discussion ensued as to the value of the book debts, in the course of which it was stated that they amounted to £194 when the receiver entered into possession of the property. Mr. Gibson expressed the opinion that the greater part of those debts could not be recovered, but Mr. Taylor, on the other hand, asserted that in the six years of the trading the bad debts contracted did not amount to £100. The Chairman said that of course it was utterly impossible to judge whether the offer ought to be accepted until they ascertained the actual present value of the book debts. An affidavit had been made by Mr. Saxon with regard to the value of the property. It set forth that the business ought to be divided into two parts—the printing and the boxmaking departments. The printing connection had been practically destroyed by the fire, but the bag-making branch had been considerably extended. The agreement for sale included the goodwill, lease, machinery, plant, trade fixtures, and book debts, and £600 was a fair price, as the old book debts were not of much value. Replying to the chairman, Mr. Saxon said he had only up the present collected £6 in respect of the old debts, the chief reason being that there were numerous contra accounts. Mr. Gibson next produced an affidavit made by Mr. Bowen, who deposed that owing to the recent fire and the machinery not having been worked for some months, he considered that the goodwill of the lithographic business had to a great extent been destroyed. It was his opinion that the estate ought to be sold in one lot, and that the offer of £600 by Messrs. Chudley and Brandon was a better price than could be obtained either by tender or public auction. A statement was made by Mr. Gibson that the machinery used in the box-making branch was principally held on the hire-purchase system. Mr. Taylor emphatically denied the accuracy of that statement, and asserted that only £20 out of the £140 worth of the machinery was held under that system. He added that he was prepared with an offer of £150 to £200 for the lithographic stones alone, and it was his opinion that the offer of £600 was most inadequate. Mr. Hare (Spicer & Sons) suggested that the business should be divided and sold in three separate lots, *i.e.*, the box-making branch, the lithographic stones, and the printing machinery, etc. He was confident that they would in that way realise at least £800. Mr. Taylor further pointed out that the machinery was still of considerable value, as would be seen from the fact that the insurance company had allowed practically nothing for damage to the machines, on the ground that they had been very little injured, if at all, by the fire. Mr. McLaurin suggested that a committee of creditors should be appointed to go through the assets and value them. He personally would take stock of the paper, and other firms could ascertain the value of the machinery, stones, and other effects. They would thus be able to get an idea of the real value without incurring the expense of another valuation, and would probably obtain a much better price than £600. That suggestion was acted upon, and the meeting deputed the official receiver to continue to act as their liquidator, with a committee of inspection, consisting of Mr. Hare, Mr. McLaurin, and the three members nominated on the previous occasion.

Re WALTER BLACKIE RANKEN, Printer and Publisher.

An application for an order of discharge was made last week to Mr. Registrar Brougham, at the London Bankruptcy Court, by this bankrupt, described as of 3, Wellington-street, Strand, and 6, Sea View-terrace, Westbrook, Margate. According to the report presented by Mr. C. A. Pope, assistant receiver, the bankrupt, who was then the proprietor of the *County Gentleman*, *Sporting Gazette*, *Agricultural Journal*, and *Man About*

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Town, failed last July, with ranking liabilities £4,828 13s. 2d. The assets, valued at £1,766 7s. 3d., only realised £400, owing chiefly to the facts that the stock and fixtures, valued at £260, were seized and sold for distrainable rent, and the bankrupt's claim to book debts to the amount of £1,500 3s. 3d., being doubtful, was compromised by the trustee, with the consent of the committee of inspection, for £400. A first and final dividend of 1s. in the pound will be paid to the creditors. The bankrupt, in 1876, became manager to his father, a printer and publisher, carrying on business at Drury-court, Strand. He was taken into partnership by his father in 1882, upon his agreement to pay £2,000 for one-third share in the business. Only £1,200 of that money was actually paid. They traded as Ranken and Co., and in 1885 or 1886, Mr. Ranken, senr., took the bankrupt into partnership, under a separate deed, in the *County Gentleman*, which was established in 1862. The bankrupt took a half share in that property, for which he paid nothing whatever. He managed the printing business, and took no part in the control of the *County Gentleman*. The printing business was sold in 1890, but did not realise sufficient to pay its liabilities. Mr. Ranken, senr., died in November, 1895, and upon his death it was found that the sum of £2,200 was due by him to the business of the *County Gentleman*. Some time before the death he and the bankrupt had occasion to borrow a further sum of £150 from Mr. Hoare, to whom in 1885 they had mortgaged for £1,200 the copyright, goodwill, and book debts of the paper. Mr. Hoare had insisted as a condition of the further loan that the financial management of the paper should be placed entirely in the hands of a manager, Mr. Chas. Wilson, the bankrupt and his father drawing four guineas weekly from the business. That management lasted until July, 1897, the bankrupt, after his father's death, coming up from Margate, where he was residing, about three times a week, to consult with Mr. Wilson. At the date of the receiving order Mr. Hoare gave notice to the bankrupt that he had realised his security, and in consequence of financial pressure the bankrupt filed his petition. He ascribed the insolvency to the excessive drawings of his late father, losses on trading, and to the mortgagee's forced realisation of the *County Gentleman*. He admitted that he became aware of his insolvency in January, 1896, shortly after the death of his father, and that debts to the extent of £497 were contracted subsequent to that date. He continued in the hope of securing a partner with capital, or of selling the paper at a sum sufficient to pay all the liabilities. The offences reported by the official receiver were: (1) insufficiency of assets to pay 10s. in the pound to the unsecured creditors; and (2) trading with knowledge of insolvency. Counsel for the bankrupt pointed out that from 1893 to the date of the petition his client had absolutely no control over the business, which was in the hands of the receiver for the mortgagee. The *County Gentleman* made a universal profit from its establishment in 1862 down to 1896, and could therefore be regarded with some reason as a valuable property. The learned Registrar said to a certain extent the failure was due to misfortune. There appeared to have been no personal extravagance on the debtor's part, and he did not propose to travel beyond the limits of the minimum term of suspension. He was obliged to impose a suspension, because of the two offences against the Act, but two years would certainly be sufficient to meet the case. Order entered accordingly.

RIVETED ENVELOPES.—Riveted letters are a novelty, and are the outcome of a desire to invent an absolutely safe envelope. Whether the problem has been solved now, I leave to the judgment of more competent people, says a correspondent, but I think that the riveted letter might strike the fancy of fashionable and other people who like something novel. The envelopes which can be secured by rivets are perforated in one or more places and before closing the letter, the stem of the rivet, which possesses a flat head, is pushed through the small holes from the inside of the envelope and the flap then stuck down. Over that stem a small nut with a conical hole is placed. This hole is wider at the top part, where the stem protrudes. All the parts are made of lead or some other equally soft metal. In order to secure the rivet a head has to be hammered out of the protruding stem. For this purpose a steel mould or seal is placed over it, and driven home either with the aid of a hammer or with the flat hand. The stem then fills up the conical hole in the nut with which its forms one solid piece, showing the clear impression of the seal. It is quite obvious that to clandestinely open and again close a thus secured letter would be difficult, if not impossible.

"WHO'S WHO, 1898."—This most useful and indispensable book of reference for the current year is just issued, and is really a most wonderful compilation, the contents comprising nearly 7,000 biographies of the leading men and women of the day, besides being a complete peerage, baronetage, and knightage, etc. A table of peculiarly pronounced proper names; a table of abbreviations; a list of representative British newspapers, with the leading Indian, Colonial, and American papers which have offices in London; tables of societies, University Degrees, and an amount of information that is of great use to all newspaper men. The work is edited by Mr. Douglas Sladen, and is published by Messrs. A. and C. Black, Soho-square, W.

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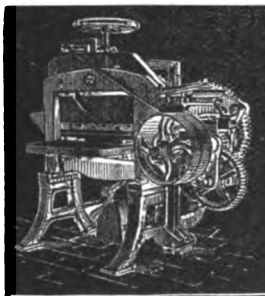

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A C..	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D..	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E..	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F..	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G..	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H..	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I..	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
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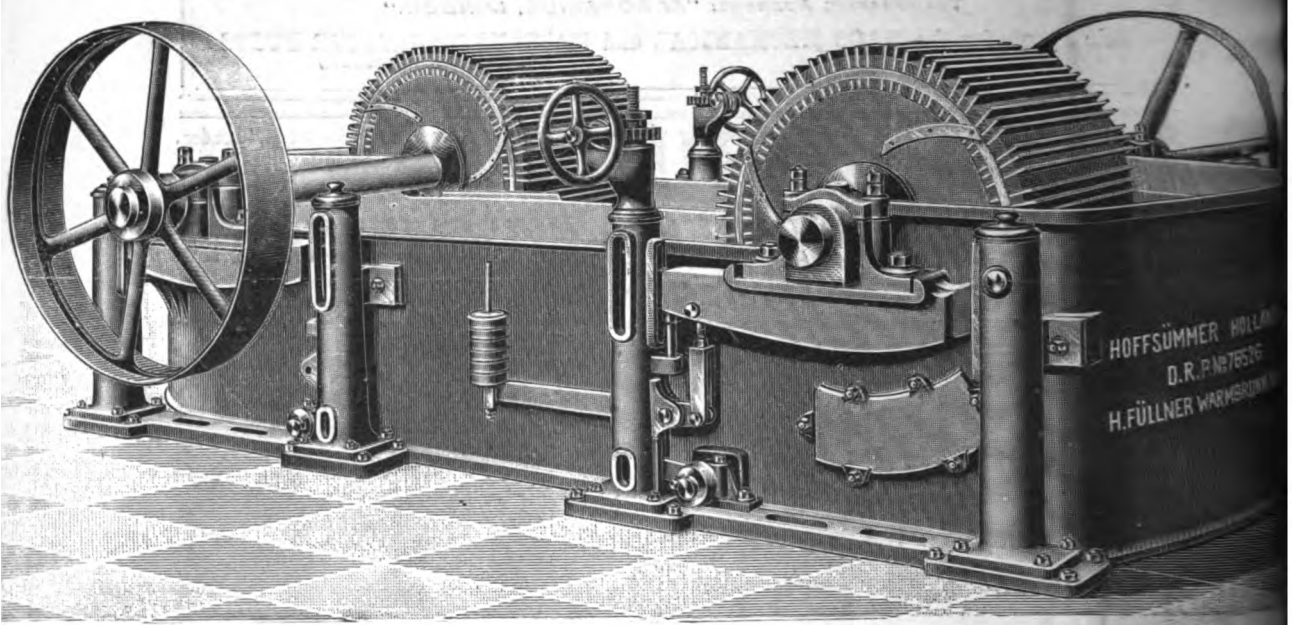

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VOL. XXIX. No. 13. LONDON: MARCH 25, 1898. PRICE SIXPENCE.

Acetylene Gas.

Its Use to the Papermaker in Matching Colours.

The exact reproduction of any desired colour and the matching of delicate shades on the one hand or the comparison of dark heavy tones of colour on the other are matters which demand the utmost skill, care and experience from the papermaker or the boatman directly responsible for the results obtained in practical working.

The difficulties which have to be faced in schemes by which these difficulties may be overcome, the means for modifying the conditions of manufacture are all well known to practical men, and it is our intention to deal simply with an aid for rendering the task of matching colours and shades of tones of colour by artificial light which is of comparatively recent origin.

The duty of making the paper correspond exactly to the sample given by a customer, in respect to its colour devolves upon the boatman. In ordinary daylight the matching of colours does not present any special difficulties, but at night-time the circumstances are so radically different that unless the most favourable arrangements are made the comparisons cannot be really effected.

Variations in the shade of an ordinary writing paper, for example, made from sulphite wood pulp, with a little esparto or possibly mechanical wood, are almost inevitable, unless every precaution is taken to watch the sheet on the machine. It is well known that some buyers of note seem almost absurdly particular about the slightest

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flame of intense brilliancy and of extraordinary whiteness, free from the yellowish tint of ordinary gas. It is developed by simply immersing a substance called calcium carbide in water. Calcium carbide is a dark grey substance, manufactured by fusing lime and coke together in an electric furnace, a pound of which will yield nearly six cubic feet of acetylene.

On account of this easy decomposition of the carbide, the apparatus necessary to produce the gas for illuminating purposes need not be elaborate, and indeed may be self-contained.

We have had our attention directed to one form of portable self-contained acetylene gas generator which is simple in construction and easy of manipulation. It is manufactured by the Fowler Acetylene Gas Co., 298, Marsh-lane, Bootle, Liverpool. A sectional view of the "Fowler" apparatus is shown in Fig. 1, and the *modus operandi*, briefly, is as follows:—The calcium carbide is placed in a cage in the upper part of the vessel, the latter being filled with the required amount of water. The apparatus consists of a gas holder fitting into a cylindrical vessel, which may be called the receiver, containing water. When the cage containing the carbide is lowered into the water by means of a sliding metal rod fixed to the upper part of the gas holder, the acetylene is evolved, and this gas is then purified by special means, indicated in the figure, to remove moisture and mechanical impurities, eventually leaving the vessel by taps suitably arranged at the lower part of the receiver. The apparatus works automatically, in that the gas holder itself rises when the acetylene is produced, thus bringing the carbide more or less out of contact with the water, checking the decomposition momentarily. As the gas in the holder is consumed, the latter descends, bringing the cage down with it, and lowering the carbide into the water, thus causing a fresh development of acetylene. The supply can be stopped altogether whenever found necessary, this being done by raising the rod which projects above the top of the gas holder. The quantity of gas required may, in fact, be regulated by raising or lowering the rod. The special features of this particular type of generator are simple enough, but are of such a character as to minimise any risk of accidents or unpleasant odours. The gas has an extremely offensive smell, but in the "Fowler" system it is completely encased, and cannot permeate the atmosphere surrounding the generator. This advantage is secured by the gas being generated in water separate from that in which floats the Bell or Gas Holder, and by this means the latter is always kept clean and the generator cool. In a properly constructed apparatus, acetylene may be generated and utilised as safely as coal gas, and the various parts of the "Fowler" generator seem to meet all requirements for safety and complete control.

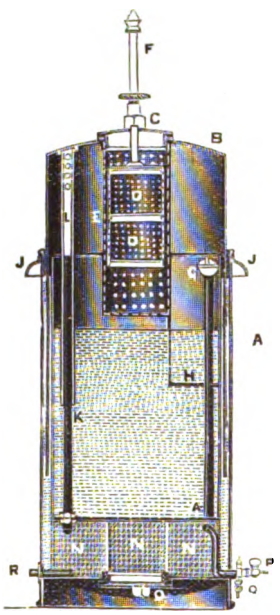

FIG. 1.

FIG. 2.

In Fig. 2 is shown a view of the apparatus combined with an independent gas holder so that the supply of gas may be continuous, the generator being removed for the renewal of the carbide, while the separate holder

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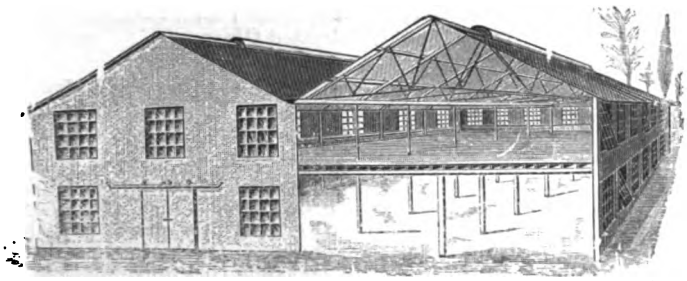
keeps up the necessary amount of acetylene required for the light.

In its application to the papermaking industry acetylene should find much scope for its adoption as an artificial light. In the actual manipulation of the pulp, whether for white, coloured or toned papers, the brilliant and intense whiteness of the light produced from acetylene affords an excellent substitute for daylight. In examining fibres under the microscope, testing papers for mechanical wood by the well-known aniline sulphate colour reaction and other analytical processes of a similar kind, acetylene gas should prove a useful and convenient illuminant. Paper manufacturers who are thinking of adopting acetylene gas for the purposes mentioned above would do well to communicate with the makers of the Fowler apparatus, who will be pleased to supply printed matter, or to advise concerning it.

IRON ROOFS AND BUILDINGS,



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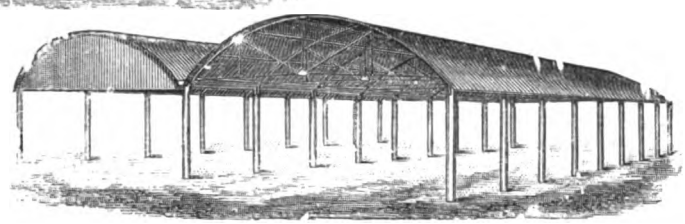

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

THE mechanical wood pulp market in Norway and Sweden is rather unsettled. Sales have not proceeded with such rapidity as manufacturers would like, and consequently there is some evidence of weakness in the matter of quotations.

CHEMICAL pulps are rather quiet, but prices are fairly well maintained.

SOME of the Scandinavian wood pulp men are crying out against the evil effects of speculation, and again we hear of certain measures to be adopted, which sound all right in theory but work very poorly in practice, to give a check to those held to be responsible for speculative dealings.

THE importation of wood pulp into France during last year was practically the same as the year before, viz., about 115,000 tons. In 1895 it was 124,000 tons. It is not considered, however, that the activity of the paper trade has diminished, the reduced import being compensated for by home production.

IN a report on the chemical wood pulp industry in Silesia, the Breslau Chamber of Commerce states that exportation during the past year to Russia and Austria has been well maintained.

RUSSIA, it is anticipated, will probably cease to buy next autumn, as by that time large sulphite works in that country will have been opened.

SULPHITE makers in Austria complain of the regulations concerning river pollution, and the attendant expense. It is contended that profit is small, and the heavy burdens now imposed must cause mills to shut down.

IT has been resolved to send a petition to the Secretary for Agriculture asking for his support in overcoming what is alleged the unjust prejudices of many of the local authorities.

WE hear that a large factory is planned in Poland.

THE WALDHOF COMPANY are, as previously mentioned in these pages, erecting works in the Baltic provinces, and will probably be able to supply the whole wants of Russian paper mills.

MAKERS of sulphite in Silesia do not regard with favour the order for the total cessation of labour, and the consequent shutdown of all departments on the legal holidays at Easter, Whitsuntide, etc. They urge that some provision should be made in order that operations should not be stopped entirely.

RECENT arrivals of wood pulp at Manchester include the following:—Geir (s): 34 bales from Gothenburg and 1,178 bales from Drammen. Neva (s): 54 bales from Stettin. Sarp (s): 1,720 bales from Sarpsborg and 1,000 bales from Fredrikshald.

WOOD PULP from the United States was imported into Great Britain during the past week as under:—826 bales and 197 rolls from Boston, landed London; 305 rolls from Boston, landed Liverpool; 150 bales from New York, landed Leith; and 1,404 bundles from Portland, landed Glasgow.

THE principal shipment received from Canada this week was 10,194 bales from St. John's, landed at Liverpool.

THE American market for sulphite fibre has very much improved since the year opened, both in demand and price, says a Boston correspondent. Quotations range from 1¾ at 2 c., according to grade, with all the mills well crowded to their capacity. Owing to the improved condition, the members of the American Sulphite Fibre Association, which was organised in December last, have had no occasion to meet again as yet.

IT is reported that Canadian manufacturers engaged in the production of sulphite fibre for export find it a profitable business. The trade has been developed amazingly during the last half year. New Brunswick takes the lead, and the output from the Chatham mills is not unknown to the British market.

THE success attained in exporting Canadian sulphite has led to several additional projects in the city of St. John's, at Grand Falls and other points at New Brunswick, as well as at Dartmouth and elsewhere in the provinces of Nova Scotia. Manufacturers in Quebec and Ontario also intend going into the industry on a large scale.

NOT only do the Canadian manufacturers of sulphite look to the British market, but also to the United States. One Ontario company has received an American order which is stated to be at a price 15c. per cwt. more than can be obtained locally.

IT may be pointed out that the imports of chemical fibre at New York last month amounted to 450 tons, of which 250 were received from Nova Scotia.

THE Acadia Pulp and Paper Mills Co. Ltd., may be considered the pioneers of the

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Canadian pulp export trade. The output of one of the mills—the Milton—acquired by this company was, during January, 1,590 tons. Considerable trouble was experienced several times from anchor ice. Mr. Hughes, the manager, says the output will be increased to close on 2,000 tons after the cold weather is over. The new mill is working finely, for it only started up the latter part of December and has run continuously ever since, Sunday excepted.

A PULP MILL, it is stated, is about to be erected at Victoriaville, the promoters of which are Hon. R. R. Dobell, of Quebec, and Mr. Panneton, of Three Rivers. They ask a bonus of 25,000 dols. from the town after they have spent 250,000 dols. upon the undertaking. The motive power is to be electricity, derived from a water power at St. Ursule.

THE first large shipment of pulp from the new mill at Placentia Bay, Newfoundland, is to be made this month.

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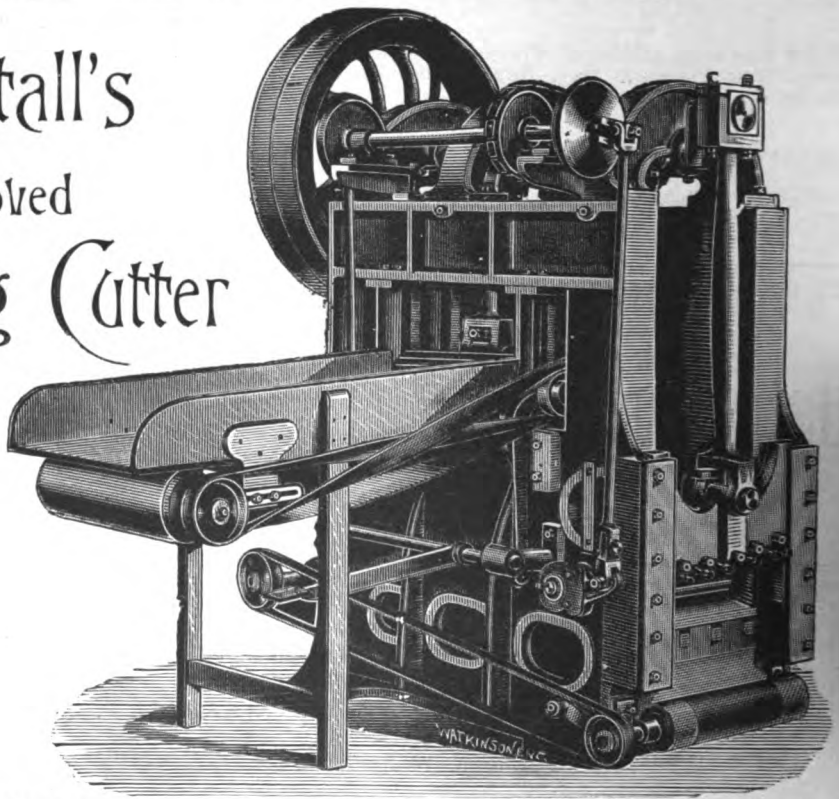

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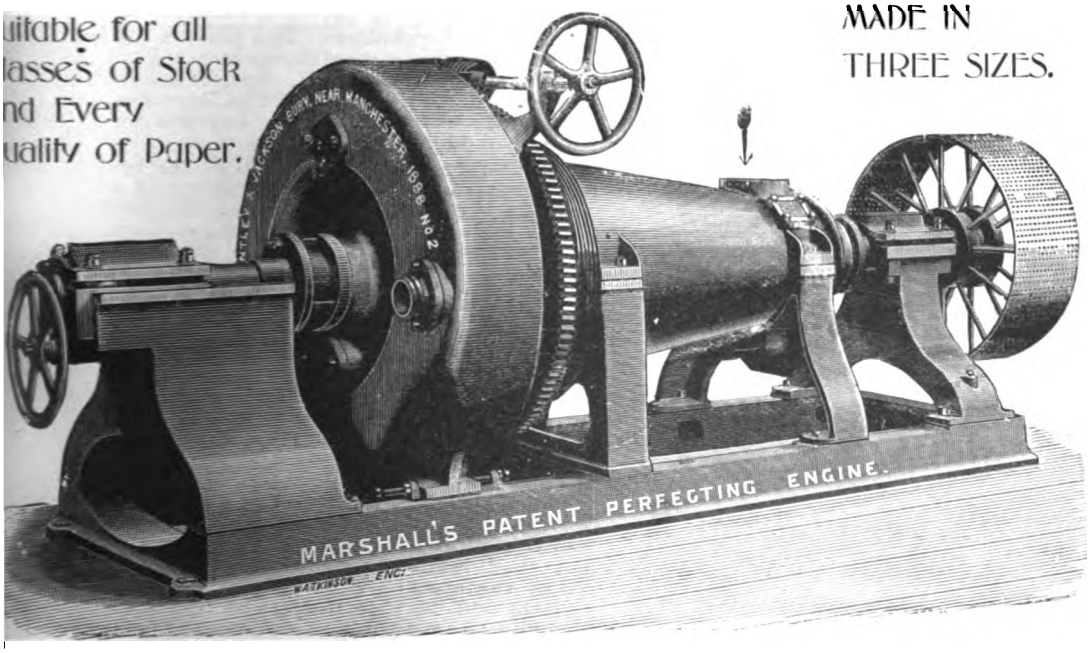

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Stocks and Shares.

The paper share market has again fallen to an almost idle appearance in consequence of slackness of business. East Lancashire continue to make headway, and ord., pref., and bonus each show a rise of ¼ on last week's figures. Bergvik pref. and Hartlepool's are quoted x.d. Waterlow and Sons def. and pref. have recovered their ¼ decline. Others remain steady at unchanged prices.

Chemical shares: Bowman, Thompson and Co. announce a dividend of 7½ per cent. on the ord. shares, which is rather more than anticipated. These consequently are higher ⅜, and the prefs. are quoted ¼ better, and seem rather strong. Castner-Kellner's continue to droop, and are down 1s. United Alkali ord. are ⅛ better, but the pref. are a like amount down, also debs. 1.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
5	5	Hyde Paper Works Co. (Ld.)	nil	½—2
10	10	Bath Paper Mill Co. ,,	5	11⅜—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	104—106
10	10	do. do. 6% pref.	6	11½—12¼ x.d.
3	5	Burnley Paper Co. (Ld.)	10	5⅝—6⅜
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref.	6	7⅛—7⅜
2½	3	Collin (Darwen) Paper ,,	nil	4/6—5/5
3½	5	Darwen Paper Co. ,,	15	7⅜—8¼
10	10	E. Lancashire Paper Co. ,,	nil	7⅛—8
10	10	do. do. 6% pref.	nil	8⅛—8¾
5	5	do. do. bonus	nil	3½—4
4	5	Hartlepool Pulp & Paper ,,	10	7—7⅛ x.d.
2½	5	Kelln'r-Part'gt'n P'p Co ,,	15	7⅛—8⅛
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	7⅛—7½
7	10	Olive Brothers ,,	10	7⅛—7⅜
5	5	Peebles (A. M.) & Son ,,	8½	7⅞—8⅛
5	5	do. 5% cum. pref.	5	6¼—6½
100	Stock	do. 4½% deb. issued 105	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	6⅛—7⅛
1	1	do. do. cum. pref.	5	1⅛—1⅜
4½	5	Roach Bridge Paper Co. ,,	10	5⅛—5⅜
5	5	Star Paper Co.	10	7⅛—7⅜
3	5	do. do. cum. pref.	10	6—6½
1	1	Thomas Owen & Co. 6% pref	6	2/—27/6
1	1	do. do. ord.	12½	2—2½
10	10	Waterlow & Sons non.-cum. def.	12	15½—15¾
		do. do. non.-cum. pref.		14¾—15¼
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	8⅝—8⅞
10	10	do. do. cum. pref.	7	11½—11½
100	100	do. do. debs. (red. 1904)	6	104—100
10	10	Brunner, Mond & Co. (Ld.)	20	4¼—4¼
3½	10	do. do. "New" ,,	20	17—17⅛
10	10	do. do. 7% pref. ,,	7	17⅞—18⅛
5	10	do. do. do. new issue	7	8⅛—8⅜
1	1	Castner-Kellner Co. ,,	—	19/6—20/6
5	5	Clayton Aniline cum. pref.	6	5⅜—6⅛
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11½
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	3	1⅛—1⅛
10	10	do. do. cum. pref. ,,	7	8 1/16—8 1/16
100	Stock	do. mort. deb. (red. after 1901)	5	108—109

United Alkali Co., Ltd.

The annual meeting of the shareholders was held at Liverpool on Friday, last week. Sir CHARLES TENNANT, Bart., presided.

The report submitted by the directors stated that the net profits for the past year amounted to £213,364, of which interest on the £2,825,240 of 7 per cent. preference shares absorbed £191,175, leaving a balance of £22,188 to be carried forward. The report also called attention to the fact that a further £50,000 had been transferred to the depreciation portion of the reserve, making the respective figures—Total reserve fund £707,780, of which there was appropriated to depreciation £650,000, leaving the balance of reserve proper at £57,780.

The PRESIDENT said they had received a disappointing, he might almost say a depressing, report. After paying the interest on their debentures and the somewhat onerous interest, as he thought, on their preference shares—(hear, hear)—of 7 per cent., there did not remain sufficient to warrant the directors in paying a dividend to the ordinary shareholders. The reasons for this disappointing state of things were pretty well known, and consisted, first, of somewhat severe competition and the large import duties which have been imposed by America and by Russia.

Mr. BROCK moved the adoption of the report and accounts and the declaration of a dividend on the preference shares. He said that at the last annual meeting the outlook in certain quarters gave them much cause for anxiety, and their fears had been fully realised, for in the United States on August 1st the Dingley tariff came into force, which increased the duties by 50 per cent. on articles of their manufacture already dutiable and imposed excessive duties on other articles hitherto admitted duty free. As their trade lay largely with the United States, the change was a very serious one for this Company. In Russia things were not much better. In France and Germany they had also heavy duties to face. It was evident, therefore, that if they were to retain this important portion of their trade—and they meant to retain it—they must follow the example of some of their competitors and have an interest in manufacturing in the countries themselves.—(Hear, hear.) They had for the present made arrangements with their Continental competitors by which they were able to retain a certain portion of their Continental trade in alkalies at fairly remunerative rates.

Mr. E. K. MUSPRATT seconded the resolution.

Mr. WEST desired to know how much of the £650,000 depreciation was absorbed by absolute realised loss on property, plant, etc., sold.

Mr. BROCK replied that they had spent more than £600,000 in extensions of plant, etc., but they had also had to abandon a large quantity which had become obsolete.

The report was adopted.

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THE ECONOMICAL USE OF STEAM IN THE MANUFACTURE OF PAPER.*

BY CHARLES E. EMERY, PH. D.

(Continued.)

The general interest in the subject of reducing the amounts paid for drying the paper has raised questions whether or not the cost could be reduced by introducing direct heat in the dryers from incandescent fuel or gas, or if the heat could be transferred more economically from the fuel to the drying cylinders by any other medium than steam. The speaker thinks not. To be sure all the heat in the fuel is not imparted to the water in the boiler, but the losses are no greater and probably less than would be incident to any other form of furnace. It is evidently impracticable to build a fire in or under a drying cylinder. The difficulties in conveying away the products of combustion and in arranging the complicated flues required to reduce the temperature of the gases and impart the heat to the paper, so as to prevent a large escape of heat to the chimney, are insuperable.

As to other mediums of conveying the heat from the furnace to the dryers, hot water would be available and would be equally efficient with steam if properly carried out. Complicated passages within the dryers would be necessary if the cylinders were not entirely filled with water, and in any case the weight would be very greatly increased, causing increased friction and, in case of accident, increased danger to life, as the storage capacity for heat in a mass of water is enormous. A man may safely pass his hand through a jet of issuing steam, when he would be scalded instantly by a few drops of boiling water. Hot water is employed in greenhouses, and some of the better class of dwellings for heating purposes, simply because the large mass of water in the pipes prevents sudden changes of temperature, and, moreover, the heating can be done at a temperature less than that due to atmospheric pressure, so that a little heat can be obtained regularly in mild weather. None of these advantages apply in heating the dryers, and in any event there would be nothing saved by the use of hot water, so we need not further consider this branch of the subject. The same objections that apply to hot water would apply to any other fluid. There only remains some indirect means of heating. For instance, gas could first be manufactured from the coal and then burned within the dryers, but, independent of economical reasons, one can see that great care would be required if the machine were stopped to prevent one part of the dryer becoming hotter than another. Moreover, constant care would be required to keep the quantity of gas burning in each proportioned to the work done therein, whereas with steam the temperature is as steady as the steam pressure, and no part of the dryer would be unequally heated with proper drainage. Independent of these considerations the application of heat is indirect. Coal is first employed to generate gas, which is a wasteful operation, and then gas is to be burned, which requires for economy special burners with openings for the gas and openings for air properly adjusted one to the other, and provision made so that heat will not be wasted by currents of air through the openings required to adjust the burners. The originators of such a scheme would certainly wish that they had some method of transmitting heat which would need little attention and maintain a constant temperature, exactly as is secured by the use of steam. We conclude, therefore, that the present practice is the best; that for every pound of paper a certain weight of water must be evaporated; that the fuel required for the same can be burned economically under a steam boiler, and the steam transmitted with minor losses to do the work, the water of condensation being returned to maintain the supply of feed water. If our assumption to the proportional weight of water in the paper as it approaches the heaters be correct, there is no way to avoid burning at least one-quarter pound of coal per pound of finished paper for the simple purpose of drying such paper. The other allowances stated are subject to correction, according to the actual conditions at particular locations.

As a matter of interest, it may be stated that under peculiar conditions an evaporation of 20 pounds or more of water per pound of coal is possible, instead of 8, 9, or say at most 10 pounds, which we have considered practicable in a paper mill. This high result is, however, only obtained by multiple evaporation, or an evaporation in series, in which there is first an ordinary steam boiler provided with a furnace in which fuel is burned in the usual way and with usual economy. In this boiler steam is generated at a high pressure and conducted to a second boiler in the form of a tubular heater in which the steam boils water and generates steam of a little lower pressure. This steam is employed to generate steam at a still lower pressure in a third boiler, the steam from the third generates steam in a fourth, and so on till the pressure is reduced nearly to that of the atmosphere. The water condensed in the first of the steam-heated boilers is returned to the fuel-heated boiler and does not affect the result. In all of the remaining steam-heated boilers the steam delivered from either one is condensed in heating the next, and the water of condensation withdrawn as distilled water, so that the aggregate evaporation may be as high as stated. Evidently this plan is not applicable to drying paper, because that must be dried under atmospheric pressure, and as the steam and vapour pass away, the heat is not recoverable. Possibly some metallurgical opera-

* A Paper read before the American Paper and Pulp Association.

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tion requiring the use of a large quantity of steam without pressure may some day come to light which will make the escaping steam a valuable by-product and thus indirectly reduce the cost of drying paper, but no such means are known to the speaker at the present time.

We call attention, however, to the fact that if in the manufacture of fine paper it is required to purify the water supply, and the impurities are of a character that they cannot be removed by mechanical filtration after precipitating by chemicals, it is possible to use the steam finally supplied for the dryers, first at a high pressure to evaporate water in a steam-heated boiler, perhaps repeating the operation, and finally to use the resulting steam to heat the dryers as at present, when the water of condensation in the steam-heated boilers could be used for the special purposes referred to. This possibility is mentioned more to interest the auditors and show the resources of various branches of engineering than to furnish the solution of any problem now confronting us.

It is, however, both practicable and economical to use the steam from the boiler, first for power and afterwards for drying the paper and other heating purposes. This system is common in paper manufacture, but I find that some persons still doubt its economy.

In the operation of a steam engine the steam actually condensed for the work done is less than 3 pounds per horse-power per hour, and as in non-conducting engines 30 to 40 pounds of steam are required to practically produce a horse-power for one hour, it follows that not more than one-tenth of the heat will be abstracted in using the steam first for developing power, and that nine-tenths of the heat will be available for heating purposes, and is as valuable, therefore, as if taken directly from a boiler at the same pressure. It has become quite common in cotton mills to use exhaust steam in the preliminary operations of dyeing and in manufactories of all kinds to use such steam for heating purposes during the winter. For engines where the whole exhaust is utilised for heating purposes it has become customary in some mills to charge 85 per cent. of the cost to heating and 15 per cent. to power. In our previous analysis of costs we have considered that 12½ per cent. is sufficient to charge to power, and this will still leave a fair margin for losses in transmission. Compound condensing engines, however, can be employed to furnish the power to drive the machine, for in round numbers one-half the cost of the steam is used on the exhaust system for both power and heating purposes, but in water-power mills, where steam power is employed only to run the machine it would be necessary also to use live steam for the dryers. In such case the relative costs would be as follows:—For exhaust heating, seven-eighths for heating and one-eighth for power, a total of 114·3 per cent. of the heating cost, whereas with live steam the heating would cost 100 per cent. and the power 50 per cent., so the saving due to exhaust heating compared with the use of the most economical engines to drive the machine with direct heating would be 100 (115—114·3) ÷ 150 = 23·8 per cent. If, however, ordinary high-pressure engines were used with direct heating the saving due to the use of exhaust steam would be fully 50 per cent. Again, however, if the whole or a large part of the whole mill were to be operated by steam power it would be possible to take steam for the drying cylinders out of the receiver between the two cylinders of a compound engine at less cost than to use a full exhaust system. This "bleeding of the receiver," as it is called, would in general not be practicable with a compound engine operating the paper machine only, as all the steam would be required for the dryers, making the engine practically non-condensing, as already assumed.

It follows, therefore, that very large economies can be obtained both theoretically and practically by using exhaust steam for drying the paper, and it may be added that any failures which have resulted in attempting to utilise this principle must be due entirely to the way in which the details have been carried out.

In this connection it will be of interest to state, in a general way, the means adopted to secure economy of steam in the large oil refinery of the Tide Water Oil Company at Bayonne, N.J., involving among other things the utilisation of exhaust steam on an enormous scale. Though the business differs from papermaking, very many of the questions involved are applicable in the operation of any steam plant. The present works represent the consolidation of several independent plants and occupy about half a square mile of territory. About 5,500 horse-power of boilers were originally installed in four boiler houses erected in different parts of the grounds, and the consumption of coal for steam purposes was about 64,000 tons per year, independent of a very large quantity consumed directly under oil stills. The steam was used to operate engines in the paraffin and other departments, in the barrel, can, box, and other factories; to operate a large number of steam pumps used to transfer the oil and finished products to different parts of the yards and to the docks for shipment; to press out the paraffine or wax in the heavier oils; to operate hydraulic presses for higher pressures, and to pump water in large quantities for cooling purposes, ammonia for refrigeration, etc. Steam was also supplied to several small plants for electric lighting. A very large part of the steam supply, however, was required for various heating operations connected with oil refining. The several superintendents and engineers were educated men of the highest order, and had been investigating the possible saving of steam by various methods. A copy of a paper by the speaker, showing the enormous consumption of steam in ordinary steam pumps, had been studied, and it had been considered

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desirable to replace many of such pumps with power pumps. Exhaust heating had been used somewhat, particularly for maintaining the temperature of the tanks in winter, and its more extended use had been discussed. The steam pumps of various sizes were scattered in all parts of the large area, some in buildings, others exposed in the air, and the length of steam pipes required to reach all the outlying points where power and heating were required was very great and caused a large condensation of steam. A prominent electric company had submitted a proposition to substitute electric motors to supply power at the different locations, and electrically operated pumps in place of the steam pumps. It was proposed to mass the high pressure boilers at one part of the yard in connection with engines of high economy, operating large dynamos to supply the electrical energy, the other boilers to be used to furnish steam for heating purposes. No agreement could be reached between the various engineers and directors of the company, and the speaker was called in consultation. It was found that a very large proportion of the steam was used for heating purposes, and the large electric plant was not approved. A smaller electric transmission was recommended to reach various outlying points where steam had to be transmitted a long distance at a very great expense in condensation, independent of the power developed, since it was necessary in winter and desirable in summer to keep the pipes warm all the time, although the power was at many of the points only used occasionally. An extension of the exhaust system was recommended, even if it became necessary to increase the back pressure, and it was urged that exhaust steam be used for all heating purposes instead of live steam. As it appeared probable that more exhaust steam would be available than could be employed for heating purposes, it was recommended that special plants, with power pumps and economical engines, be erected at various parts of the grounds and particularly in the paraffine department. Without going into full details, it is sufficient to say that the recommendations were adopted, and carried out efficiently under the directions of the superintendents of the company, and resulted in a saving of fully one-half the coal required for steam purposes, or 32,000 tons per year. One boiler house was entirely shut down, another partially so, and a considerable saving in labour effected, so that the saving for the first year was upwards of 50,000 dols., after deducting the cost of making the changes. The greater portion of this saving was undoubtedly due to the use of exhaust steam, but the cutting off of small steam pipes running to the docks and obscure corners, and the use of an electric plant to supply power in these localities, had its influence on the comparatively small portion of the power operated in this way. A single three-phase dynamo erected alongside a large economical compound pumping engine, and requiring no additional cost for labour, furnished electric current for both power and lighting, and the three small lighting plants were dispensed with. The interest evinced by the large staff of intelligent engineers and superintendents, and their careful attention to the subject, moreover, secured, in consultation with the speaker, economies in arrangement of piping, in protection from radiation, and in the management of fuel, which had also an influence on the result. Before the changes the grounds were overhung by clouds of escaping steam. Now hardly any is visible. In comparison it seems like Sunday, or as if the work was stopped, whereas actually the output is fully as great as before. In so large an establishment there were very many details touched upon of great interest which it will be impossible here to recount, though it may be desirable to refer to some of the same in connection with further remarks it is proposed to make with special reference to the economical use of steam in the manufacture of paper.

A FIRE occurred last week at Gray's Paper Mills, Slateford, Midlothian. The store, which is a building about 100 feet by 40, was pretty well burned out.

DELTA METAL CO., LTD.—After adding £500 to reserve fund and placing £1,169 to depreciation, etc., a dividend of 8 per cent., less income-tax, has been declared, and the balance carried to new account.

THE EXPORTS OF PAPER from New York, according to the last weekly list, included the following:—To London, 2,018 packages, and 81 bundles; Liverpool, 69 packages and 636 bundles; Manchester, 315 packages and 1,491 bundles; Southampton, 5 packages; and Glasgow, 199 packages. Shipments to Antwerp were 76 packages; Bremen, 3 cases; Hamburg, 44 packages; Havre, 2 packages; Rotterdam, 44 packages; B. Guiana, 200 packages; Brazil, 131 packages; Africa, 22 packages; Australasia, 487 packages and 2 cases; B. W. Indies, 1,275 packages; Chili, 528 packages; W. Indies, 36 packages; Mexico, 1,180 packages; N. Zealand, 2 pkg.

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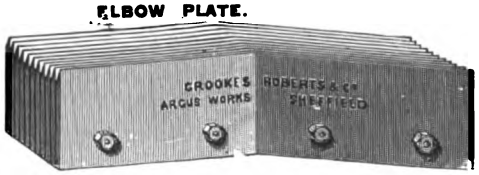

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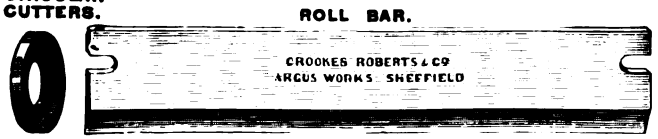

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

RESTARTING OF THE ALLENWOOD PAPER MILL, CARLISLE.—We learn from a local source that the paper mills at Allenwood, which have been standing idle for some time, have now been let, and it is expected the works will again be in full operation in the course of a few weeks. The premises are being repaired, ready for a start.

MESSRS. TOWNSEND HOOK AND CO., LTD., of Snodland, have decided to make various extensions to their works. Some cottages adjoining the mill are to be demolished, and the finishing house to be extended. We understand a new calender, by Haubold, has been ordered.

MESSRS. JOHN COLLINS, LTD., of Stoneywood and Herbertshire Paper Mills, Denny, N.B., have introduced into their Herbertshire mill a marine compound engine of 350 horse-power, constructed by Messrs. Duncan Stewart and Co., Ltd., London-road, Glasgow, to designs by Mr. Motion, of Messrs. Stewart and Co., and Mr. Napier, manager of Herbertshire works. A number of ladies and gentlemen were present at the start, and the steam was turned on by Miss Helen Logan, daughter of Colonel Logan, the managing director.

WE understand that the Leykam-Josefsthal Paper Co., of Vienna (their engagement with Messrs. P. Sabel and Co. being about to terminate), have decided to open premises in London, where a large stock of their various makes will be held. They have appointed as their London manager and representative for the United Kingdom, Mr. E. Bradshaw, formerly connected with another Austrian House, and latterly with Messrs. John Dickinson and Co., Ltd. His representation begins with April.

MR. HENRY WHEATCROFT, sole proprietor of the Via Gellia Paint and Colour Co., of Cromford, Derbyshire, has purchased the High Tor Barytes and Colour Works, Matlock Bath, which have been worked by Messrs. Stevens Bros. and Mr. F. S. Ginger for over sixty years. Mr. Wheatcroft will continue the business in conjunction with his Via Gellia Works, and having now the advantage of largely increased water-power, he claims to be in a position to guarantee the very finest levigated and powdered colours that can be produced. All communications should be addressed to the Gellia Paint and Colour Co., Matlock Bath.

THE MANCHESTER SHIP CANAL AND CANADA.—An advice from Canada states that Sir Boston Leech and Alderman Wilson Southern (directors of the Manchester Ship Canal) have interviewed Sir Richard Cartwright (Minister of Trade and Finance) with the object of securing an annual subsidy of 70,000 dols. for a fortnightly steamship service between Manchester and Canada by the Furness Line. The matter has been submitted to the Cabinet.

THE ESPARTO TRADE.—Paper manufacturers are evidently showing more preference for esparto than formerly, the comparatively low prices which have been ruling of late no doubt influencing demand. The imports, published in our Market Reports, will be seen to be particularly heavy this week.

ANGLO-SICILIAN SULPHUR CO., LTD.—An interim dividend on the preference shares at the rate of 6 per cent. per annum (calculated on the amount per share paid up) for the half-year ended January 31st last will be payable on and after 26th inst.

THE PAPERMAKERS' ASSOCIATION.—The annual dinner of this Association, which was fully reported in our last issue, was pronounced by the large company present as a huge success. The idea of extending invitations to the allied trades will tend to make the objects and aims of the Association more widely known, and will also add to the popularity of the organisation. The arrangements of the gathering were ably carried out, thanks to the energetic efforts of Mr. H. R. Summers. A feature of the evening was the excellent programme of music rendered under the direction of Mr. Arthur Grudge. The artistes were Miss Phyllis Hope, Mr. Ager Grover, and Mr. George Schneider. During the dinner "The Whitehall Orchestra" played selections with pleasing effect.

THE MACHINERY TRUST, LTD.—At the fourth annual general meeting of the above-named company, held in London on Friday, last week, the chairman, Mr. J. Lawrence, said the result of the year's working was a dividend of 20 per cent. In their prospectus they tied themselves down to the point that the dividend should not be higher than 20 per cent. until the reserve fund reached £50,000. They meant to abide by this promise, and when they reached that amount they would consult the shareholders as to what should be done. The chairman moved the adoption of the report, which was adopted. Mr. E. J. Halsey and Mr. Thomas Sowler were re-elected directors.

"THE WIDE WORLD MAGAZINE" (price sixpence) is a new publication, issued by Geo. Newnes, Ltd., and one that is likely to be greatly appreciated by a very wide section of the great reading public. The contents are deeply absorbing and full of thrilling interest, and mainly treat of adventures that come within the region of truth. Amongst the principal contributions may be mentioned, "How the North Pole will be Reached," by Dr. Nansen; "The Course of the Slaver 'Carl,'" by Vice-Admiral Markham; "The Romance of Seal Hunting," an interview with Sir Geo. Baden-Powell; "The New Route to Klondike," by R. L. McIntosh. The subjects treated throughout the first number are highly instructive, and the accompanying photographs numerous and unique.

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ANOTHER WIDE MACHINE.—The Pusey and Jones Company, Wilmington, Del., have received a contract for the largest paper machine ever built by the company. It is for the Willamette Pulp and Paper Company, Oregon City, Ore., is of the Fourdrinier pattern, will be capable of turning out news paper 151 inches in width, and will be run at a high rate of speed.

TARIFF DECISION.—The Board of United States General Appraisers have handed down a reappraisement as follows:—17,143—Parchment paper, from Siegmund Kraut, Berlin, December 21st, 1897. Entered at ·12½, advanced to ·49 mark per kilo, packing included; deduct inland freight.

DEATH OF MR. WILLIAM M. SINGERLY.—The death is announced of Mr. William M. Singerly, editor and publisher of the Philadelphia *Record*, and president of the suspended Chestnut-street National Bank and Trust Company. The cause announced was heart disease. Since the crash of the two financial institutions of which he was the head, Mr. Singerly had been under a severe strain of anxiety, which told heavily upon his vitality. For several years he was subject to spells of depressed activity of the heart, attributed by his physician to the habit of excessive smoking. His establishment of the pulp and paper mills in Cecil County, Md., grew out of his ownership of the *Record*. He was born in Philadelphia on December 27th, 1832.

CLAY RETENTION.—An American Manufacturer writes:—"I desire to get some light as to the method of figuring clay retention in use among the mills. My clay man contends that a test of 12 per cent. clay in a sheet, made from an engine containing 1,000 pounds stock and 200 pounds clay, from which engine I get 1,000 pounds of paper, indicates a retention of 72 per cent., while I say that the retention is only 60 per cent. Figured in this way, I find that my retention of English clay for the past six months is only about 47 per cent., while it is claimed that other manufacturers get a retention of 80 per cent. Will some one enlighten me as to whether the error is in my figures or in my method of using, and if the latter, where the loss occurs? I use save-alls, and mix my clay with warm water before putting in the engine."

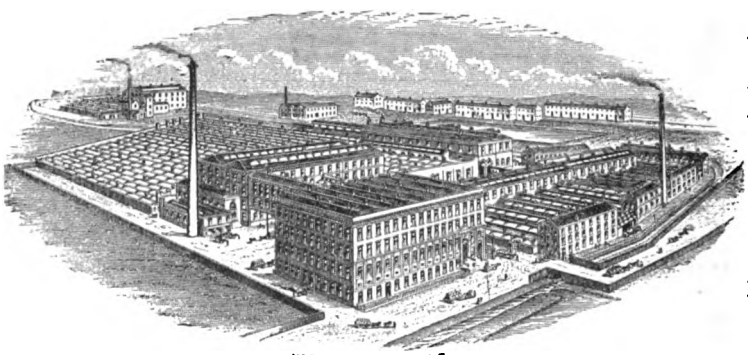
SEVERAL shipments of chilled rolls have been made to England recently from the foundry of the Apollo Iron and Steel Company at Apollo, Pa., and further orders are booked.

TURNER BROTHERS,

SPOTLAND, ROCHDALE.

Telegrams—
"TURNERS ROCHDALE."

TELEPHONE NO. 3.



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FRIDAY, MARCH 25, 1898.

American "News" in Great Britain.

The combination of American "news" mills, under the name of the International Paper Co., intends to cultivate foreign markets for all they are worth, and British papermakers will probably have to meet stronger competition from the United States in the future than in the past. According to Mr. Hugh J. Chisholm, vice-president of the International Paper Co., the export trade is to be a strong feature of the company's operations. "We are," says Mr. Chisholm, "sending agents abroad with the intention of drumming up business in every possible quarter. American paper has made such a favourable impression abroad that the English mill owners are putting in plants modeled on our own, so as to be able to compete with us in the quality of the paper. We are shipping paper to Great Britain, Australia, and Japan, and we intend to bend our energies towards increasing largely the business done in these and other countries. The export trade will be one of the means by which we shall increase the earnings of the company. The other will be by cutting expenses down in various ways that will not injure the toiler, but merely correct abuses that have run their course quite long enough. The consolidation was forced by the sheer inability of the individual companies to make a living under the old regime. I should like this to be thoroughly understood. It is the mill owners themselves that have forced this combination. We are not an octopus with golden tentacles that has stretched out and grasped the various branches of the business, as some have unjustly suggested."

* * *

How to Meet Foreign Competition!

This was one of the questions that the Papermakers' Association had under consideration at its recent annual meeting. America was regarded as a powerful competitor and one that was even supplanting continental countries in the supply of paper to the British market. We cannot say that any specific remedy was suggested to meet foreign competition, but a resolution was passed to the effect that it would be advisable to cultivate closer relations with Canada, and become interested in the wood pulp trade of that country; further, it would be beneficial both to the Canadians and the papermakers in this country if a duty were placed on the exports of pulp wood to the States. It was maintained that the Britishers, providing they were not too heavily handicapped by arbitrary circumstances, could make paper as cheaply and profitably as any other country in the world. The home consumption of paper has increased considerably during recent years, and no doubt the production of British paper is larger to-day than ever it has been, despite a decreasing exportation and an increasing importation. Statistics on the production of British mills, if they could possibly be compiled, would be extremely valuable, and if published annually would serve admirably for comparative purposes. Although there is from time to time a deal of croaking as to the decadence of the paper industry of this country, one cannot be blind to the life and vigour shown by many of our papermakers, and the best evidence of their enterprise is the substantial profits made.

* * *

Scandinavia v. Canada.

The Scandinavians will not relish the idea of British papermakers seeking relief from foreign competition by becoming wood pulp manufacturers with works in Canada. There is a feeling in the trade that by combination some substantial advantages might possibly be received from the Canadian Government, especially if it is shown that the future wood pulp exportation to Great Britain would be upon a much larger scale. It is possible, however, that efforts would be made in Canada to ship paper as well as pulp, and in course of time Canadian paper manufacturers may supplant the Americans in the "news" trade with Great Britain. But

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such a development is not what British papermakers want, although they no doubt would rather see the business in the hands of the Canadians than the Americans.

* * *

Railway Rates on Wood Pulp.

In reference to our remarks in our last issue on the Papermakers' Association, a correspondent associated with the wood pulp industry directs our attention to a matter which, in his opinion, is far more important than English papermakers seem to think, viz., the railway rates on wood pulp in this country. When compared with the rates charged in other countries a glaring contrast is shown, indicating how exacting the railway companies have been towards the papermaking industry. Such instances may be mentioned as 4s. 2d. from Preston to Feniscowles, and 5s. 11d. from Preston to Clitheroe. Our correspondent thinks the matter should be thoroughly ventilated and discussed, and one deserving of attention at the hands of the Papermakers' Association.

* * *

"Secret" Processes.

The sanguine nature of inventors is sometimes infectious. They are sure of the wonderful success of their inventions, if taken up, and the immense wealth, beyond even the dreams of "Klondikers," that will follow the initial financial support from those who they may succeed in charming with the golden outlook. The *Paper Trade Journal*, of New York, tells a story how a Mr. Albert F. Neuman, who, possessed of a wonderful "secret" relating to the manufacture of parchment paper, succeeded in obtaining the financial support of American papermakers, certainly not to the advantage of the latter. Mr. Neuman is alleged to have acquired from his father the "grand secret" of producing German parchment paper, and further, he is reported to have worked it with unlimited success at the Neusser Papier u Pergament-papierfabrik in Germany. Recognising the heavy exports to the States, the idea occurred to him, "Why not manufacture locally and pocket the big profits." He acted upon the inspiration, went to America, and succeeded in interesting various parties, who provided machinery, labour, lavished money, paid Neuman high salaries, without the German Parchment Paper, of American manufacture, being forthcoming. Of course support to develop the "wonderful secret" could not go on for ever, and upon dissatisfaction being expressed, Neuman, with a sense of injury, accused his financiers of attempts to get his "secret" from him and then throw him over. Our contemporary says it is a sad story of misplaced confidence that cost 12,000 dols. in one case alone.

"The Recent History of Papermaking."

This was the title of a paper, read by Mr. Clayton Beadle, at the Society of Arts, on Wednesday, the 16th inst. We briefly referred to the subject in our last issue, mentioning that the author pointed out that the present year was the centenary of the papermaking machine—Nicolas Louis Robert's great discovery. It was in 1798 that Robert conceived the idea of making paper by means of an endless wire machine. Robert's discovery gradually brought about a complete revolution in the manufacture of paper. Mr. Beadle said it was his intention to trace briefly some of the more important changes that have taken place since that time. He referred to the scarcity of raw materials 100 years ago, and the early treatment of rags, particularly mentioning the cleansing process, the boiling in open pans, the low-pressure kiers, as described by Sir John Evans in his presidential address before the Society of Chemical Industry, in 1893, and the pressure boilers, cylindrical and spherical.

The author stated that when treating large quantities of rags, the "Mather Kier" made by Messrs. Mather and Platt, of Manchester, was more economical than a cylindrical or spherical boiler.

Rags known as "new pieces," which contain a large amount of starch, cannot be cleansed like ordinary rags. The starch, instead of being dissolved and removed by caustic alkali, as one would expect, is in presence of the other foreign matter, converted into a brown slimy mass, or into hard and horny particles, which do damage in the after processes. For the removal of the starch it is generally customary to boil first in hot water, to drain off, and then to boil under pressure in a weak solution of caustic soda. This process is far from satisfactory, in consequence of starch forming with cotton and linen fibres a compound known as "starch-cellulose," from which the starch cannot be removed by boiling water. Mr. C. F. Cross suggested the use of malt extract, and about six years ago Mr. Beadle was associated with him in working this on a large scale. The process has been in regular operation since it was first started. The amount of malt necessary varies from 1½ to 3 lbs. per 100 lbs. of rags, according to the amount of starch they contain. The malt is saturated with water, which should have a temperature of 150 degs. Fahr. in summer, and 170 degs. Fahr. in winter. It is allowed to soak for two hours, drained off, and filled with hot water, which is shortly drawn off and mixed with the first draft. The malting of the rags is done either in a rotary boiler or a kier. The malt liquor is introduced into the boiler, together with sufficient water at 80 degs. Fahr. to keep the rags saturated. From one to two hours is sufficient for the conversion of the starch

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into dextrine and maltose. The rags are then washed with hot water.

In regard to bleaching, our forefathers made use of the only bleaching agent they had, viz., the sun's rays. Sun bleaching (or grass bleaching as it is sometimes called) had, however, one redeeming feature—it did not injure the fibre. Chlorine was discovered by Scheele in 1744, and was used for bleaching in 1787. Hypo-chlorite of lime or bleaching powder was first used by Tennant in 1799.

Chlorine gas appears to have been first applied as a bleaching agent. The rags or "half-stuff" were placed in stone chambers, and the chlorine generated in stone retorts. This process, although effective, was very cumbersome, and by no means pleasant, in consequence of the escape of chlorine gas into the surrounding atmosphere. In spite of the difficulties of this process, it died hard; it was in use for a great many years, and long after bleaching powder had taken hold among papermakers, chlorine bleaching was still practised for certain purposes. Chlorine is rapid in its action, and, of course, has the advantage over bleaching powder in that it does not add lime salts to the fibre.

The first application of bleaching powder to rags, the speaker believed, was in what is known as tumbler bleaching. The best and most universal method of bleaching rag-stuff, Mr. Beadle pointed out, is to add a bleaching solution to the "breaker" or the "poacher." The rag "half-stuff" is generally heated with a steam jet to accelerate the bleaching action. After a few hours' action, the bleach is either washed out in the poacher or the half-stuff is emptied into "steeping" tanks, and after the chlorine has exhausted itself upon the fibre, the stuff is drained and dug out and removed to the crater. A better method of getting rid of the liquor is to pass the half-stuff over a *presse-pate*.

Several attempts have been made to utilise potassium permanganate and sodium-manganate as bleaching agents. Both these substances, when added to rag half-stuff, liberate bleaching oxygen and coat the fibres with black oxide of manganese. After the addition of sulphurous or sulphuric acid, the black coating is removed, and the fibre is found to be bleached. The action of permanganate is almost instantaneous. The process has not been thought much of in consequence of the high price of permanganate. Mr. Beadle had made a number of trials both on a large and a small scale with this substance. At the time of his trials permanganate was just ten times the cost, weight for weight, of bleaching powder. He found, however, that 1 lb. of permanganate did as much bleaching as 10 lbs. of bleaching powder. The fibres, however, very tenaciously retained a small residue of manganese salts, which caused the finished paper to "go back" in colour. From a theoretical point of view, the results are interesting, as showing that the oxygen of permanganate is a more efficient bleaching agent than the oxygen of bleaching powder. In other words, 1 lb. of permanganate oxygen bleaches a much larger quantity of material than 1 lb. of bleaching-powder oxygen.

Many attempts have been made to utilise electrolised solutions of the chlorides. Andreoli electrolised a solution of brine forming sodium hypo-chlorite. The most promising of these processes, however, is the Hermite process. Hermite obtained magnesium hypochlorite by electrolising a solution of magnesium chloride. He claimed that 3 lbs. of chloride in his solution did as much bleaching as 5 lbs. of chlorine in ordinary bleaching-powder solutions. These claims were substantiated by the results obtained by Professor Pictet and Messrs. C. F. Cross, and E. J. Bevan in the bleaching of wood pulp and other fibres. In order to see whether the same held good in the bleaching of rags and rag half-stuff, Mr. Beadle conducted a number of trials, both in "steeping tanks" and in a papermaker's beater. His average figures were in the ratio of 3 lbs. of Hermite chlorine to 4·8 lbs. of bleaching-powder chlorine, thus closely confirming the figures of other observers.

The Hermite solution, besides consuming less chlorine, was also much more rapid in its action than ordinary bleaching powder. From figures given by the proprietors of the process it appears that a great saving could be effected by the adoption of this process, but as far as he was aware, the Hermite process had not been worked with success in any paper mill in this country.

At present there appears little prospect of any bleaching agent displacing bleaching powder. If he might venture to prophesy, he should say that a complete change will come some day when we have a cheap and ready method of producing ozone or ozonised air that could be easily worked by papermakers.

Ozone is an excellent bleaching agent for paper pulp. Its action is very rapid, and there is no chemical residue that can be either injurious to the fibre or to the paper machine.

During last year several attempts were made to revive the early history of the paper machine. The most important publication on this subject appeared in *The World's Paper Trade Review*. It contained an account of the invention of the first paper-machine and a history of those men whose names should ever be remembered, not only by papermakers, but also by the whole of the civilised world, for the lasting benefits they have conferred upon us. The men to whom he referred were Robert, Didot, Gamble, Henry and Sealy Fourdrinier, and Bryan Donkin. He could not do better than refer all those who feel sufficiently interested in the subject, to the above-mentioned publication. He then briefly explained the part which these men played in the invention and development of the paper machine, particulars of which have already been presented to our readers in the series of articles we published under the heading of "The Invention of the Papermaking Machine." Mr. Beadle's observations were listened to with great interest.

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In referring to other discoveries in connection with the papermaking machine, Mr. Beadle said suction pumps were applied to Didot's mould-chain machine in 1812. It was not until 1826 that suction pumps were applied to the Fourdrinier machine by Canson, who kept it a secret for a time, but communicated it to Wise and Middleton in 1832. The method of applying the suction was improved upon subsequently by Brown and Crompton.

Crompton in 1820 took out a patent for "drying and finishing paper by means of cloth or cloths against heated cylinders, and the application of a pair of shears to cut the paper off in continuous lengths as it comes from the machine or rollers."

The "Crompton Dryer" gave a great impetus to the manufacture of machine-made paper. In consequence, however, of the imperfections of the Patent-law of his time some people succeeded in setting aside his patents.

In 1828, Crompton and Taylor obtained a "patent for cutting paper longitudinally by means of revolving circular blades." This method of cutting paper is in common use at the present time.

The following interesting statement appears in the report of the jurors of the Exhibition of 1851:—"Fine writing paper is now made, sized with gelatine, dried, and cut into sheets at the rate of 6C feet a minute in length and 70 inches in width, at the works of Mr. William Joynson, at St. Mary Cray, Kent, which produces from only two machines the large quantity of 25 tons per week." Contrast this with the output of one of our modern machines producing paper. A modern machine will produce a piece of paper 300 to 400 feet long and 120 inches wide in one minute, and will turn out about 55 tons of paper per week. This is about five times the output in weight and five times the speed of a machine in 1851. The best machine in 1810 was run at 30 feet per minute. This is half the speed of a machine in 1851.

Mr. Lines, the foreman at Mr. William Joynson's mill, is generally accredited to be the first to "water-mark" machine-made paper. He tried it by sticking some twisted wires on to the "couch" roll by means of soap. However, we find that Thomas Barratt, of St. Mary Cray, took out a patent in 1830 for inserting the maker's name in machine-made paper. Barratt also produced rolls by a new process with a great degree of accuracy, and it was owing to this that the surface glazing of paper was so much improved. It is probably largely owing to Barrett's efforts that Messrs. Joynson and Son have obtained such a reputation for plate-glazed and highly-finished writing paper.

Ibotson, in 1830, invented the strainer plates, which have been of such service in removing the knots, lumps, and dirt from the pulp, and thus enabling papermakers to produce clean papers.

The "dandy-roll" was invented in 1830, by Wilks, a partner in the firm of Bryan, Donkin and Company. The dandy was primarily used to remove some of the surplus water, and so facilitate the "couching" of the stuff; but the "dandy-roll" now is constructed of wire, and imparts to the surface of the paper the "laid" or "wove" marks. It is also the roll which carries the name or water-mark, which it imparts to the paper by making an impression upon it when in a semi-wet condition.

In 1809, Dickinson constructed a machine on quite a different principle to the Fourdrinier machine, for making endless paper. This consisted of a hollow cylinder covered with wire cloth, revolving in a vat of pulp. The air was exhausted from the interior of the cylinder as it revolved, which caused a net-work of fibres to form on its surface, which was stripped off in the form of an endless sheet of paper. This form of machine, known as the cylinder machine, is in extensive use to the present day for the manufacture of a certain class of paper.

The year of Her Majesty's accession to the throne was an important one to papermakers. It was in 1837 that an impetus was given to the paper trade of this country by the abolition of one-half of the excise duty on paper. It was not, however, until the year 1861 that the whole of the excise duty was removed, and in that year also the import duty on foreign papers.

Mr. Bryan Donkin, junior, had informed Mr. Beadle that it was not until 1835 or 1837 that the manufacture of continuous lengths of paper was really accomplished. About that time sheets were made for the first time, a mile or more in length.

In the manufacture of the paper-machine wires, great progress has been made within recent years. Under the old system the wire was drawn through steel plates, pierced to suit the diameter of wire wanted. Even in the hands of the most experienced, it was difficult to make the hole perfectly smooth, and while the wire was being drawn, the hole often got slightly enlarged, so that a hank of wire would be a little greater in diameter at the end than at the beginning. Because of this, the wire cloth was more or less rough and irregular, thus causing a very pronounced wire mark on the paper, and irregular wear on the machine. Now, all wire used for this purpose is drawn by special machinery through diamond or carbon dies, the holes in which are perfectly round and smooth, and as the die is very much harder than the wire drawn through it, absolute accuracy can be relied on for a considerable time, and any irregularity or increase in diameter can be readily detected and rectified. Machine wires made of wire drawn in this way can be made stronger, and at the same time more smooth and regular than under the old style.

The opinion held by many is that machine wires to-day are not so strong and durable as those woven 30 years ago. That the reverse is the case will be readily conceded when the very different working conditions are kept in mind. Paper machines now carry a very much larger wire, and are run at a greater speed than they were 30 years ago. Different classes of material and stronger chemicals are also employed, and throughout the

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whole mill things are pushed through at a pace undreamt of at that time.

The true standard of value of a wire is the tonnage of paper produced, and judged on this basis the wires of to-day will much more than hold their own with earlier wires; in fact, the latter would be found to be quite unsuitable for the requirements of modern manufacturing.

A case in point may be quoted. In *Papermaking* of January 5th, 1897, a well-known firm of paper-machine wire manufacturers —George Christie, Limited, of Glasgow— had an extract from a letter they had received from a continental mill, the mill owners writing as follows:—"It will doubtless be satisfactory for you to know that the wire which you sent for our large machine has worked nearly four months (119 days), and has produced 600,000 kilos. of paper (about 590 tons)."

At the Papermakers' Exhibition, held in London in June, 1897, the same firm had on exhibit a *presse-pate* wire which had been on the machine for ten months, during which time the machine ran off 4,515 tons of material.

In fine papers to-day, a very fine finish is insisted on, and without the improvements already referred to, this could not be given.

Messrs. George Christie, Limited, Glasgow, have lately taken out a patent for an attachment to their wire-weaving looms, by means of which the surface of the wire is rendered perfectly smooth and regular, while the cloth can be woven of grea weight. In consequence, the wire mark on the under side of the sheet is greatly minimised, and the life of the wire on the machine increased.

When the *presse-pate* came into use, it was necessary to provide a machine wire that would withstand the action of the bleaching powder contained in the "half-stuff;" this is now done by coating the wire with tin. The tinned wire lasts as many months as the uncoated wire did days.

The utilisation of esparto grass, straw, mechanical and chemical wood pulp for the manufacture of paper, has brought about in recent years a complete revolution. It is entirely outside the scope of this paper to enter into the history of these substances. Wood now forms the chief staple in point of quantity as a papermaking material, and its utilisation is likely to increase in the near future. Undoubtedly, the next generation will be brought face to face with a serious problem. The Board of Forestry in Germany are alive to the necessity of replanting the timber of forests that have been rapidly depleted for the manufacture of wood pulp; but in other countries enormous quantities of timber are being removed from the forests annually without any attempt at replanting. The requirements of the paper trade are likely to become a great drain upon the forests of Scandinavia, United States, and Canada.

Judging from the present rate of increase, the wood required will, before long, assume enormous proportions. It was estimated a few years ago that in the United States of America alone 500,000,000 cubic feet of timber were consumed annually, representing the destruction of 100,000 acres of forest. It was also estimated that each day the *New York World* consumed timber equal to seven acres of an average forest. The world's timber suitable for papermaking is not inexhaustible, and we may some day be in a position in regard to wood as this country was at the end of the last century in regard to the supplies of rags.

There has been a great deal said during the last few years about the high speeds of some of the American paper machines. We have heard a good deal about American machines running at 500 feet per minute, but these statements must be taken with the proverbial "grain of salt." If such high speeds have been actually attained, it can only be for the purpose of breaking the record. A machine conscientiously constructed to run regularly at this excessively high speed must be a very doubtful economy. The first cost of such a machine must be very great. The wear and tear and depreciation must be very high, and the machine wires and felts must be specially made, and consequently very expensive. Such a machine appears to me to be very much like the "Great Eastern," built much before her time.

It may some day happen that the construction of paper machines may be so improved, and the "stuff" worked in such a way as to enable papermakers to work with advantage at this high speed; but he thought he was right in saying that the general consensus of opinion is strongly against such high pressure for profitable work. Some of our most enterprising papermakers have put down high-speed paper machines, apparently with no other object than that of outdoing their American rivals, and, although their machines have been constructed by American engineers, as far as he was able to learn, they have not succeeded in approaching the high speeds for which the machines were built. The defect appears to be not in the construction of the machines themselves, but rather to the fact that the general conditions are so different in England, and far less favourable to high speeds than in the United States of America.

In conclusion, Mr. Beadle directed attention to the great change that has taken place in the paper trade of this country during recent years. As he had already pointed out, the introduction of substitutes for rags made a complete revolution in the manufacture of paper. Chemistry entered, or rather should have entered, very largely into the manufacture when rags were the staple article. When Mr. Routledge introduced esparto grass, a knowledge of chemistry became more important, and still more so when wood was treated by the sulphite and soda processes. But within the last fifteen or twenty years another change has taken place. It no longer pays to treat wood in England—the wood must be converted into pulp—close to the source of supplies, consequently the chemical operations have been diverted to Scandinavia, Canada,

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and the States. The English papermaker now takes his ready-prepared pulp, and the process of converting into paper is almost wholly mechanical. The users of rag and esparto still, of course, continue to do the whole of the chemical operations themselves. As we have seen, a paper mill with two machines producing 25 tons of paper per week was looked upon with awe in 1851. Within the last few weeks we have witnessed the amalgamation of some of the leading "news" mills in the United States, known as the International Paper Company. This company has a daily output of 1,543 tons of paper, or not very far short of 9,000 tons of paper per week.

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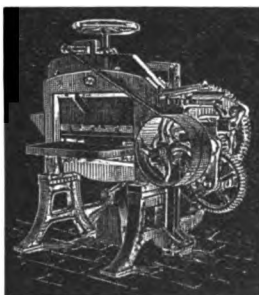

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A C	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
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FINLAND.

KANNUKOSKI AKTIEBOLAG.—The American engineering firm of Black and Clawson has recently shipped to the above company a 64-inch four cylinder machine, for the manufacture of wood pulp boards.

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FRANCE.

THE French exportations of paper and cardboard in 1895 were over 12,000 tons, in 1896 nearly 14,000 tons, and last year about 15,200 tons. The value of the exports of paperhangings has fallen off nearly 30 per cent. in two years, *i.e.*, from £128,000 in 1895 to £88,000 in 1897. As regards mill statistics, it is pointed out that whereas in 1891 there were 411 French paper mills, running 577 steam engines, aggregating 14,540-h.p., in 1896 these figures had increased to 632 steam motors, totalling 23,755-h.p., although the number of mills had fallen to 409.

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GERMANY.

THE MANUFACTURE OF NEWS.—The German trade papers are interested in the discussion as to quality of "news" and the relative values of the different blends of sulphite pulp and mechanical wood pulp, with some filling added if necessary. Some take 15 to 20 per cent. of strong sulphite, and remainder mechanical pulp, whilst others favour 30 to 40 per cent. cheaper sulphite and remainder mechanical. Some add 8 to 15 per cent. cotton waste to give more softness to the paper. The latest tables of the Charlottenburg Office give a number of tests which are of great interest, though of course local considerations mostly settle the question whether one or the other material should be used.

WINKLER'S PAPER TESTING OFFICE lately received its 5,000th proposal for a test, and in celebration a dinner was given by Herr Otto Winkler at the Leipzig Union Club to a number of friends. Speeches were made by Herr Winkler and Dr. Klemm. It was pointed out that the development in the paper industry during the last few years had required more frequent tests than before. Many of the tests showed a steady improvement in the German article.

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TURKEY.

A FRENCH consular report states that in Trebisonde and at the ports of the Black Sea, only the most common papers sell, which mostly come from Austria, either direct or *via* Constantinople. A small quantity of the best grades of paper is received from Great Britain. The silk weavers at Aleppo import an Italian white wrapping paper shipped from Leghorn, but Austrian makers have lately been able to undersell the Italians. Writing paper comes from Austrian mills, note-paper from Austria and Italy, straw paper from France, grey grocery paper from France also. France formerly supplied cigarette paper, but has been supplanted by Austria. Papermakers wishing to cultivate business should appoint respectable local agents. In Smyrna travellers can do business, and Germans and Austrians are going all over the district. Syria ought to be visited regularly, but there are no merchants who make a speciality of paper. Most of the papers made are very cheap and come from Fiume or Italy. Tissue paper comes from Austria. The requirements of Palestine are entirely supplied by Austrian and Italian makers.

Bowman, Thompson and Co., Ltd.

The directors of Messrs. Bowman, Thompson and Co., Limited, chemical manufacturers, Lostock Gralam, near Northwich, have issued the seventh annual report, to be submitted to the shareholders at the annual meeting on the 29th inst. It states:—"During the year the works have been fully employed, and are in the highest state of efficiency in every department. The agreement with the United Alkali Company, Limited, and Messrs. Brunner, Mond and Co., Limited, is now in complete operation. After providing for such charges and contingencies as are thought necessary, the net profit for the year is £29,260, to which must be added £755 14s. 2d. brought forward from last year, leaving a total of £30,015 14s. 2d. to be dealt with. Adding £5,000 to the reserve fund—which will then stand at £25,000—and after writing off the following—20 per cent. of goodwill account, £2,937 5s. 9d.; balance of New York expenses, £1,092 19s. 11d.; balance of preliminary expenses, £800; proportion of debenture commission account, £200—the directors recommend a dividend for the year 1897 of 7 per cent. on the preference shares, and 7½ per cent. on the ordinary shares, which, including the interim dividend paid on September 1st, 1897, will absorb £24,748 16s. 1d., leaving a balance of £5,256 17s. 4d. to be carried forward. If the above recommendations be adopted, the dividends will be payable on the 5th April. The director who retires by rotation is Mr. Joseph Law, J.P., who offers himself for re-election. Mr. James Davies, J.P., having retired from the board, the directors, following the precedent of the largest and most successful industrial companies, have offered the vacant seat to the general manager, Mr. J. I. Howitt, who has accepted it, subject to the approval of the shareholders."

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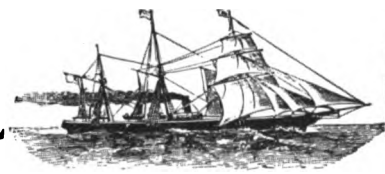
NORWEGIAN ROYAL  MAIL STEAMERS

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One feature of the invention consists in printing or otherwise impressing upon paper a plurality of sets of lines or marks, of which one or more sets are indelible, and the remaining sets delible.

Another feature of the invention consists in making the lines or marks so fine and so closely alternating or relatively disposing them that in ordinary observation with the naked eye no single line or mark will be distinguishable.

Another feature of the invention consists in making the indelible lines or marks of a colour differing from but preferably complementary to the colour of the delible lines or marks, so that owing to their close juxtaposition they will convey the impression of a colour differing from the colours of either of the sets of lines or marks.

Another feature of the invention consists in leaving a space between each two delible and indelible lines or marks of no greater width or area than said lines or marks.

It will, of course, be understood that the lines or marks can be relatively arranged in an unlimited number of ways.

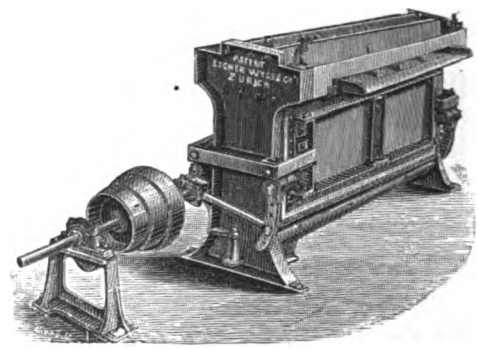
It has been attempted to make a safety paper by alternating groups of delible and indelible lines or marks, and it is well known in the art of carpet and tapestry weaving that by placing threads of different and complementary colours side by side or intermingling the same an impression of a colour differing from the colours of either of such threads is conveyed to the eye. This, however, has never, to the inventor's knowledge, been attempted to be applied to a safety paper, and for this reason he believes his invention to be new in its most essential features, namely, to make the delible and indelible lines or marks of different and complementary colours so closely alternate or intermingle the same as to convey the impression to the eye of a colour differing from the colours of either of said lines or marks, and to leave between or intermingle with said lines or marks in practically the same relation thereto as the relation to each other of said lines or marks a space not covered by any impression.

The last-named feature is of the utmost importance, for the reason that were no space left between the lines or marks of different colours the delible lines or marks could be completely erased and then replaced with a transparent ink from a flat plate, so as to cover the indelible lines or marks, and owing to the transparency of the ink the latter would not effect or hide the indelible lines. For example, if a safety paper were produced by printing indelible red lines alternated with delible green lines, leaving no space between each red and green line, the delible green lines could be erased, and then be replaced by printing over the entire surface of the paper, so as to cover the red lines with a transparent green ink. The latter, though covering the red lines, would not hide nor change the shade of the same, and therefore an alteration could not be detected. Where a white space is left between each red and green line, the latter to be replaced would have to register with the red lines again, so as to leave such white space between it and said red line. Owing to the exceeding fineness of the lines this would be utterly impossible.

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



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The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

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SUPERIOR to any other System for its Numerous Advantages as:

Large Production with any kind of Pulp.
No Stoppage for Cleaning.
Most Regular and Quite Noiseless Working
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16. MINCING LANE, LONDON, E.C.

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United Asbestos Co.,

LIMITED.

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"SALAMANDER" THE UNITED ASBESTOS COMPANY LIMITED · LONDON · INDESTRUCTIBLE TRADE MARK

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(For Steam Boilers and Pipes)

Best and Cheapest in the Market; Will not injure Boiler Plates.

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UNITED ASBESTOS A1 MILLBOARDS

(ITALIAN)

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Salamander Lubricating Cream and Oils

Specially adapted to Papermaking Machinery.

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Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	4495	380	981
ARGENTINE	—	84	18
AFRICA	116	62	30
BELGIUM	29	51	35
B. W. INDIES	—	9	—
B. GUIANA...	40	12	—
BRAZIL	—	—	4
CAPE COLONY	41	14	349
CANADA	377	111	—
CHILI	20	—	—
CHINA	3645	59	—
CHANNEL ISLES ...	—	—	21
DENMARK	—	—	5
EGYPT	—	22	—
FRANCE	336	4	191
GERMANY...	52	—	—
HOLLAND...	46	20	48
INDIA...	127	93	94
JAPAN	61	—	12
NORWAY	—	—	10
NEW ZEALAND ...	435	270	499
PORTUGAL	61	—	—
PERU	—	—	10
SPAIN...	—	—	101
SWEDRN	23	—	79
S. AMERICA	—	33	—
U.S.A.	—	—	9
W. INDIA	—	37	104

FROM GLASGOW.

	Printings. Cwts.	Writings. Cwts.	Various Cwts.
ARGENTINE	96	—	—
B. GUIANA...	—	22	—
CAPE COLONY	—	—	140
CANADA	—	33	—
INDIA...	340	70	—
NEW ZEALAND ...	—	—	114
NORWAY	—	—	33
W. INDIES...	—	113	—

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last :—

STRAWBOARDS.

13162 b	Enden	London	419 b	Rotterdam	Liverpool
2355 ,,	Rotterdam	,,	234 r	Boston	,,
728 ,,	,,	,,	4321 b	Rotterdam	Manchstr
4799 ,,	Delfzyl	Grangemth			

WOOD PULP BOARDS.

100 b	New York	Leith	82 b	Malmo	Grimsby
81 ,,	Gothenburg	Hull	173 c	New York	Liverpool
89 ,,	,,	London	41 b	Gothenburg	,,
55 c	New York	,,	20 c	Christiania	Grngmth
110 r	,,	,,	127 b	Gothenburg	Mnchstr

MILLBOARDS.

40 b	Hambro	Manchester	6428 b	Delfzyl	Goole
6821 ,,	Harlingen	Hull	2 c	Hamburg	Leith

PASTEBOARDS.

560 b	Trieste	London	210 cr	New York	Liverpool
46 ,,	Hambro	,,	40 ,,	Harlingen	Leith
2386 ,,	Hango	,,	2 c	Rotterdam	Grngmth
400 ,,	Rotterdam	,,	103 b	Trieste	Liverpool

b—bales. c—cases. r—rolls. cr—crates.

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls
AUSTRIA	371	13	—
BELGIUM	1919	10	—
DENMARK...	29	—	—
EGYPT	3	—	—
FRANCE	810	8	—
FINLAND	1674	—	—
GERMANY	3156	11	—
HOLLAND	18580	11	—
NORWAY	1647	—	—
SWEDEN	4565	—	771
SPAIN...	7	—	—
U.S.A.	3503	143	773

Including the Following:—

Quantity	From	Importer	Port
22 bales	Copenhagen	Bryne & Co	London
39 ,,	Gothenburg	Schenkenwald & Co	,,
20 ,,	,,	Tegner, Price & Co	,,
98 ,,	,,	Becker & Wagner	,,
23 ,,	,,	R. L. Lundgren	,,
5 ,,	,,	E. Saunders	,,
26 ,,	,,	A. Rosdale	,,
5 ,,	,,	A. J. Brown & Co	,,
10 ,,	,,	Crabb & Co	,,
62 ,,	,,	Waterlow & Co	,,
2 ,,	,,	Grosvenor, Chater & Co	,,
16 ,,	,,	O. Scholzig	,,
1010 ,,	,,	Skarblacka	,,
178 ,,	,,	J. Eberstein	,,
6 ,,	,,	Tullis & Co	,,
24 ,,	,,	G. F. Green & Co	,,
10 ,,	New York	Wyckoff & Co	Southampton
38 ,,	,,	New Supply Co	,,
2 ,,	,,	The Shannon, Ltd.	,,
29 ,,	Trieste	P. Sabel	London
89 ,,	,,	D. Gulland	,,
421 rolls	Uddevalla	Schenker & Co	,,
137 ,,	,,	R. L. Lundgren	,,
217 ,,	,,	Schenkenwald & Co	,,
15 ,,	Yokohama	Berrick Bros.	,,

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BATCHELOR, Richard D., Artesian and Consulting Well Engineers, 73, Queen Victoria Street London, E.C., and at Chatham.

ISLER, C. & Co., Bear Lane, Southwark, London, S.E.

CHINA CLAY.

ROGERS, J. & Co., Truro, Cornwall.—Agents, W. G. Taylor and Co., Ltd., 83, Queen Victoria Street, London, E.C., and 44B, Lancaster Avenue, Manchester.

W. SINGLETON BIRCH & SONS, Ltd., 15, Upton Street, Manchester. Mines: Rosevear, St. Austell, Cornwall.

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HINSHELWOOD, Thomas & Co., The Glasgow Colour Works, Glasgow. Colours and shades matched exactly.

The VIA GELLIA PAINT & COLOUR Co., Cromford, Derbyshire. Colours in every variety. Samples and prices on application. Enquiries solicited.

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GROVE CHEMICAL Co., Ltd., Appley Bridge, near Wigan, Lancashire.

MINERAL WHITE or TERRA ALBA.

CAFFERATA & Co., Newark-upon-Trent.

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PULP and PAPER MILL EXPERTS.

C. D'OYLEY MEARS & Co., Wardrobe Chambers, Queen Victoria Street, London, E.C. Experienced Pulp Arbitrators.

RAG, ROPE and METAL MERCHANTS.

CASTLE, Arthur, 113, Cannon Street Road, London, E.

RAGS.

CHALMERS, E. & Co., Ltd., Bonnington Leith.

MULLER, A. E., 9, Fenchurch Street, London, E.C.

SCHNURMANN, J., 148, Wool Exchange, London, E.C. Importer and Exporter of Paper Stock, Woollen Rags, Waste, etc.

STEEL.

MAKIN, Wm. & SONS, Sheffield. Established 1736. Roll Bars, Plates, Cutter Knives, Doctor Blades etc.

STRAW.

UNDERWOOD, E. & SON, Ltd., Brentford, London, W. Press-packed Oat, Wheat, or Rye Straw, delivered to the chief British ports or railway stations.

WOOD PULP.

ALSING & Co., Ltd., 110, Cannon Street, London, E.C. Agents for the well known "K.K." Soda Pulp; also Sulphite and Mechanical.

AUSTIN & ELTRINGHAM, 21, Old Corn Exchange, Manchester. Wood Pulps, Satinite, Sulphate of Alumina, and all Papermakers' Chemicals and Colours

GRANT, W. & Co., 17, Baltic Street, Leith. Agents for best shippers, Sulphite and Sulphate, Mechanical, Pine, Brown, Aspen.

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WERTHEIM, A. & Co., Hamburg.

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Abyssinian and Artesian Tube Wells.

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Hydraulic Engineers,

Magdala Works, Bunhill Row, London

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Have for Sale—

CHILLED CALENDER ROLLS of various sizes.

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STEAM ENGINES, up to 14-inch cylinders, &c., &c. 3044

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c.; at the Ports of London, Liverpool, Mancheater. Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams

Telegrams—"STONHILL, LONDON."

CHEMICALS.—The market continues quiet. There is a fair demand for BLEACHING POWDER, which is quoted £5 5s. per ton soft wood casks on rails. CAUSTIC SODA, 77 per cent. stands at £8 10s. to £8 12s. 6d. and 70 per cent. £7 to £7 2s. 6d. CAUSTIC BOTTOMS are unchanged at £4 10s. to £4 15s. AMMONIA SODA ASH, 58 per cent. is quoted £4 5s. f.o.b. Liverpool, Carbonated 58 per cent. £4 12s. 6d., and Caustic 57-58 per cent. £4 17s. 6d. RECOVERED SULPHUR is obtainable at £4 12s. 6d. to £4 17s. 6d. per ton on rails. SALT CAKE is offered at 18s. to 19s. per ton. There is a steady enquiry for HYPO-SULPHITE OF SODA; ALUM is dull; and SULPHATE OF ALUMINA unchanged.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½%	5 5	0
,, ,, barrels	...	,, ,,	2½%	5 15	0
,, ,, tierces	...	,, Hull	2½%	5 2	6
,, ,, ,,	...	Goole	2½%	5 2	6
,, ,,	...	f.o.b. Glasgow	2½%	5 2	6
Alum (Lump) ,,	...	f.o.b. Liverpool	2½%	4 12	6
,, ,, barrels	...	,, ,,	2½%	4 15	0
,, ,, tierces	...	,, Hull	2½%	4 12	6
	...	Goole	2½%	4 12	6
,, ,, ,,	...	London	2½%	5 2	6
,, ,, ,,	...	f.a.s. Glasgow	2½%	4 10	0
Alumina Sulphate	...	f.o.b. Tyne	net	3 12	3
Aluminoferric Cake, slabs		Liverpool ...	...	2 15	0
,, ,, tierces		,, ...	...	3 2	6
Alumina Cake, ... slabs		Glasgow ...	...	2 10	0
Blanc Fixe	...	f.o.b. Tyne	net	6 17	6
Bleach, ...	...	,, ,,	net	6 0	0
,, (soft wood)	...	f.o.r. Lancs.	net	5 5	0
,, (hard wood)	...	f.o.b. Liverpool	net	6 0	0
,, (soft wood)	...	landed London	net	6 5	0
Borax (crystals) ...	...	... ...	net	14 10	0
,, powdered ...	...	... .	net	15 0	0
Chloride of Barium	...	f.o.b. Tyne	net	6 15	0
Caustic White 76%	...	f.o.b. Liverpool	net	8 15	0
,, 74%	...	,, ,,	net	8 10	0
,, 70%	...	,, ,,	net	7 10	0
,, 70%	...	f.o.r. Lancs.,	net	7 7	6
,, 60%	...	f.o.b. Liverpool	net	6 10	0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5 15	0
,, 60%	...	f.o.b. Liverpool	net	5 17	6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4 12	6
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4 12	6
,, ,, 48%		,,	net	4 7	6
,, ,, 58%		f.o.r. Widnes	net	4 10	0
,, ,, 48%		,, ,,	net	4 5	0
,, Ammonia 58%		f.o.b. Liverpool		4 5	0
,, ,, 48%		,,		4 0	0
,, Caustic 48%		,,		4 12	6
,, ,, 57-58%		,,		4 17	6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5 0	0
,, 10-ton lots		ex ship Liverp'l	net	5 5	0
Oxalic Acid	...	f.o.b. Liverpool	3½%	per lb	3
Salt Cake	...	on rail, in bulk		1 2	0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35 0	0
,, (2nds)	...	,,		33 0	0
Soda Crystals		f.o.b. Tyne	net	2 15	0
,, ,, ...		ex ship Thames	2½%	2 15	0
,, ,, ...		f.o.b. Liverpool	5%	2 17	6
Sulphur, roll		f.a.s. works	2½%	6 5	0
,, flowers		,, ,,	2½%	7 5	0
,, recovered ...		,, ,,	2½%	5 0	0
Sulphate of Ammonia ,,		,, ,,	2½%	9 12	6
,, of Copper ...		,, Liverpool	5%	26 10	0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks ...	4 10 0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn	3 15 0
Blanc Fixe (c.i.f. London)	7 0 0
White Sugar of Lead	24 10
Zinc Oxide	18 5 0
Bleaching Powder	5 15 0

CHEMICAL WOOD PULPS.—The market is without any particular movement. Prices of SULPHITE are well maintained, and quotations for SODA pulps are firm.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8 12 6	to 9 0 0
,, Superior ,, ...	9 5 0	,, 9 10 0
,, Bleached, ...	11 10 0	,, 15 0 0
SODA, Unbleached, Common ...	8 5 0	,, 8 10 0
,, Extra...	8 15 0	,, 9 5 0
,, Bleached	10 10 0	,, 12 0 0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 130 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.	to 25.
,, Bleached	31.	,, 36
SODA, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.
SULPHATE, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.

AMERICAN QUOTATIONS.

AMERICAN SULPHITE, Unbleached	$1.62 to 2
SODA Bleached	1.70 2
FOREIGN SODA, Unbleached ...	2.15 2.10
,, Bleached	2.70 2.80c.
,, SULPHITE, Unbleached	2.30 ,, 2.75c.
,, ,, Bleached...	3.25 ,, 3.30c.

MECHANICAL WOOD PULPS.—The Scandinavian makers of Mechanical appear anxious to push sales, and consequently prices are rather weaker. Arrivals come freely to hand from the United States, and some 10,914 bales were landed this week at Liverpool from St. John's, Canada.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry		£6 10 0
Pine, Dry	£4 5 0	to 4 12 6
,, Moist	2 2 6	,, 2 7 6
Brown, Dry		4 15 0
,, Moist		3 10 0

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt.)

Pine Pulp, 50% moisture, ordinary ...	Frs. 11. to 12.
,, ,, fine ...	12.50 ,, 13.
,, dry, ordinary	11.50 ,, 11.75
,, ,, fine	11.75 ,, 13.
Aspen, ,, ,, ...	16. ,, 17.50
Half-Chemical Brown, 50% moisture	10.50 ,, 11.
,, ,, dry ...	12.50 ,, 13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ...	$12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
4040 bales	Drammen	E. Lloyd	London
1992 rolls	Antwerp		,,
826 bales	Boston		,,
197 rolls	,,		,,
510 bales	Stettin		,,
1760 ,,	Antwerp		,,
562 ,,	Ostend		,,
546 ,,	Rotterdam		,,
46 ,,	Hambro		,,
2984 rolls	Antwerp		,,

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Quantity	From	Importer	Port
213 bales	Ghent		London
750 ,,	Oporto		,,
200 ,,	Hango		,,
250 ,,	Gothenburg	A. H. Keep	,,
320 ,,	,,	W. G. Taylor & Co	,,
300 ,,	,,		,,
5950 ,,	Drammen	R. Lloyd Ltd	,,
305 rolls	Boston		Liverpool
10 brls.	St. John's		,,
10914 bales	,,		,,
37 ,,	Rotterdam		,,
100 ,,	Ghent		,,
204 ,,	Gothenburg		,,
1183 ,,	Christiania		Hull
1737 ,,	Gothenburg		,,
860 ,,	Drontheim		,,
127 ,,	Bergen		,,
93 ,,	Hango		,,
1720 ,,	Sarpsborg		Manchester
1000 ,,	Fredrikshald		,,
3895 ,,	Gothenburg		,,
15 ,,	Rotterdam		,,
102 rolls	,,		,,
150 bales	New York		Leith
55 ,,	Bergen		,,
150 ,,	Konigsberg		,,
122 ,,	Rotterdam		,,
80 ,,	Ghent		Goole
594 ,,	Gothenberg		Granton
1401 ,,	Portland, Me.		Glasgow
6000 ,,	Holmestrand		Grangemouth
1176 ,,	Christiania		,,
34 ,,	Rotterdam		Grimsby
400 ,,	Hambro		Bristol

Totals of Wood Pulp from Each Country:

BELGIUM ...	3125 bales	HOLLAND ...	102 rolls
,, ...	4976 rolls	NORWAY ...	22111 bales
CANADA ...	10914 bales	PORTUGAL ...	750 ,,
,, ...	10 brls.	PRUSSIA ...	150 ,,
FINLAND ...	293 bales	SWEDEN ...	7300 ,,
GERMANY ...	446 ,,	U.S.A. ...	2380 ,,
HOLLAND ...	554 ,,	,, ...	502 rolls

ESPARTO.—A persistent and full demand continues to be felt for African esparto, but sellers are much firmer and some have withdrawn all quotations from the market for the present. Spanish is also in request but new crop prices are deemed somewhat high and buyers feel inclined to hold back.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—Fair to Good	£4 15 0	to	5 2 6
,, Fine to Best	5 12 6	,,	5 17 6
Oran — Fair to Good	2 17 6	,,	3 0 0
,, First Quality	3 1 3	,,	3 2 6
Tripoli — Hand-picked	2 17 6	,,	3 0 0
,, Fair Average	2 12 6	,,	2 15 0
Bona & Philippeville	3 1 3	,,	3 2 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
3579 bales	Almeria		Manchester
771 tons	Aguilas	H. Ottomann	Granton
855 ,,	,,	Morris and Co	Tayport
475 ,,	,,	,,	Aberdeen
415 ,,	,,	,,	London
2382 bales	Carthagena		Cardiff
37 tons	,,		,,
2387 bales	Gourin		Liverpool
395 tons	Oran	Morris and Co.	London
3227 bales	,,		Fleetwood
241 tons	Philippeville		Granton
708 bales	Sfax		Liverpool
1537 ,,	Skira		,,
3791 ,,	,,		,,
6350 ,,	Tripoli	Ide and Christie	London

STRAW.—There is an abundant supply, and the market is weak. Prices:

Oat Straw, ...	c.i.f. London	40/0	f.o.r. Goole,		
Wheat ,, ...	do.	42/0;	do.	40/0	
Rye ,, ...	do.	52/6;	do	52/6	

STRAW PULPS.—Market firm.

Prices, c.i.f. London, Hull or Leith.

German, dry. No. 1	£14 0
,, No. 2	£13 0 0

FOREIGN RAGS.—The demand for French paper stock is well maintained, and lately British imports have been on a larger scale from Germany. It may be mentioned that a lot of 140 bales of rag pulp was received this week at London from Rotterdam. Imports of rags at British ports during the past week were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
8	Stettin	Hull	77	Ghent	Goole
49	Rotterdam	,,	41	Boulogne	,,
63	Bremen	,,	79	Antwerp	Grimsby
50	Konigsberg	,,	112	Rotterdam	,,
5	Boston	,,	184	Ghent	,,
206	Amsterdam	,,	49	Hambro	,,
289	Rouen	London	341	Dieppe	,,
19	Gothenburg	,,	194	Ghent	Leith
43	Venice	,,	73	Antwerp	,,
10	Lisbon	,,	47	Hambro	,,
66	Cologne	,,	1	Dunkirk	,,
26	Stettin	,,	36	Amsterdam	,,
78	Treport	,,	137	Konigsberg	,,
8	Hambro	,,	44	Jersey	Southamptn
35	Amsterdam	,,	77	Bordeaux	Liverpool
134	Ghent	,,	30	Naples	,,
51	Delfzyl	Goole	70	St. Nazaire	Newhvn
24	Rotterdam	,,	33	Caen	,,
29	Dunkirk	,,	41	Ghent	Manchester
789	Hambro	,,	7	Bordeaux	,,
272	Boulogne	,,	12	Antwerp	Glasgow
202	Antwerp	,,	2	Christiania	Grgmth
50	Amsterdam	,,	14	Rotterdam	,,

Totals from Each Country:

BELGIUM ...	67 bales	ITALY ...	30 bales
CHANNEL Isles	44 ,,	NORWAY ...	2 ,,
FRANCE ...	1226 ,,	PRUSSIA ...	195 ,,
GERMANY ...	1048 ,,	SWEDEN ...	19 ,,
HOLLAND ...	577 ,,	U.S.A.	5 ,,

DUTCH RAGS.

f.o.r. Hull or Goole; 2/6 per ton extra London and Leith, 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope coils)	8/0	Not ree from wood	5/0

BELGIAN RAGS.

f.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6; Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/3
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/0
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linen	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cuttings	21/0
Prints (Light ...	8/6	Print Cuttings ...	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Bl e Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	2c/0
Coloured Cotton ...	3/6	,, Stay ...	15/0

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GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/o	FF Grey Linens ...	8/o
SPFFF	18/o	LFX Second ditto...	7/o
SPFFF and SPFF	17/o	CSPFFF	14/o
SPFF	14/o	CSPFF	10/o
SPF	11/o	CFB	6/o
CCC	5/o	Dark Blues selected	11/o
CFX	4/o	Wool Tares... ...	8/o
White Rope... ...	6/o	Jute, No 1 6/-: No. II	5/o

STETTIN: C.i.f. Hull Leith, Tyne and London.

SPFFF and SPFF	17/o	LFB (Blue)	8/o
SPF	11/o	CSPFFF	14/o
FF	8/o	CSPFF	10/o
FG	8/6	CFB (Blue)... ...	6/o
FFX	7/o	CFX (Coloured) ...	4/

PRUSSIAN RAGS.

O.i.f. London, Hull, or Leith.

SPFF	16/o	CC (Cotton)	4/o
SPF	12/6	Jute I	3/o
FG	10/o	,, II...	2/6
LFB	8/o	Rope I...	8/o
FF	5/6	,, II ...	6/9

NORWEGIAN RAGS.

O.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/o	2nd Canvas ...	7/o
and ,, ,, ...	5/6-6/o	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ..	3/6-5/o
Best Canvas ...	11/o-12/o	Mixed ...	2/6-2/o

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/o
2nd ,, ,, ...	2/6	Rope, Thick	6/o
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* at Smyrna and Salonica.

HOME RAGS. — LONDON: Fair demand; prices unchanged.—BRISTOL: Steady enquiry.—MANCHESTER: Moderate business; prices well maintained.—EDINBURGH and GLASGOW: There is a good demand at firm prices; stocks in the district are reported to be practically exhausted. — DUBLIN: Market steady.

LONDON

N. White Cuttings	18/o-22/o	Canvas No. 1 ...	14/o-15/o
Fines (selected)...	19/6-21/o	,, No. 2 ...	9/6-10/o
,, (good London)	17/o-17/6	,, No. 3	5/o
Outshots (selected) ...	11/o	Mixed Rope ...	3/o-4/o
,, (ordinary) ...	9/o	White Rope ...	3/6-5/o
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/o
Country do. ...	4/o-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/o	Gunny	2/o-2/3

BRISTOL:

Fines	16/o	Clean Canvas	14/o
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/o	Light Prints ...	6/o
Thirds	2/6	Hemp Coil Rope	9/6-10/o
Mixed Bagging... ...	2/6	Tarred Manilla	6/o

MANCHESTER:

Fines	14/o-15/o	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/o
,, (ordinary)	8/6	,, (common)	2/o-2/3
Seconds	4/6-5/o	W. Manilla Rope	7/o-7/6
Thirds	2/o-2/6	Surat Tares... ...	2/6-3/o

EDINBURGH:

Superfines	15/o	Black Cottons ...	2/9
Outshots	12/o	W. Manilla Rope ...	7/o
Mixed Fines...	14/o	Tarred Manilla Rope	5/9
Common Seconds ...	7/o	,, Hemp Rope...	8/o
First do.	10/o	Rope Ends (new) ...	6/o
Prints	5/o	,, ,, (old) ...	4/o
Canvas (best)	15/o	Bagging...	2/3
and	8/	,, (clean)...	3/o-4/o

GLASGOW.

Fines	12/6-16/o	Canva No. 1.	15/o
Blues	4/6	,, No. 2.	10/o
Common Blues... ...	3/3	Manilla Rope	8/o
Bagging	4/o	Tarred Hemp	9/o

DUBLIN.

Whit Cuttings ...	16/o	Mill Bagging	2/o
Fines	9/o	White Manilla...	6/9
Seconds	3/6	Tarred Hemp	6/o
Light Prints	2/6	Rigging	10.0
Black do.	1/6	Mixed Ropes ...	

WASTE PAPERS.—Steady demand.

Cream Shavings ...	10/o	Small Letters ...	3/o
Fine ,, ...	8/o	Large ,, ...	4/3
Mixed ,, ...	2/6	Brown Paper	2/o
White Printings ...	7/o	Light Browns	3/3
White Waste ...	1/9	Dark ,, ...	2/o
Wood Pulp Cuttings	3/o	Books & Pamphlets ...	3/6
Blue Paper	2/o	Strawboard Cuttings	1/3
Crushed News	2/o	Jacquards	7/o

For Export: 2s/- per ton extra.

JUTE.—Prices:

Good Wht	£15 o to £16 10	Common	£7 10 to £8 o
Good	£13 o to £14 10	Rejections	£6 10 to £7 10
Medium	£10 o to £12 10	Cuttings	£3 o to £4 o

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

STARCH.— Prices are unchanged, but Farina is particularly firm.

F.o.r. London, less 2½%

Maize—Crisp, £9 5/-; Pearl, £6 5/-; Powder, £6 15/o Special £14.

Farina—Prime, £11 10/-; B.K.M.F., £13 10/-. Delivered, less 2½%:

Rice—Special (in chests), £19 o/-; Crystal (in bags) £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£15

SIZING.—Stocks small; prices firm.

English Gelatines per cwt.	90/o	to	120/o
Foreign ,, ...	70/o	,,	100/o
Fine Scotch Glues	45/o	,,	60/o
Long Scotch Glues	35/o	,,	40/o
Common Black ,, ...	25/o	,,	28/o
"Town" Glues	38/o	,,	45/o
"Bone" Glues	26/o	,,	30/o
Foreign Glues	28/o	,,	35/o
Bone Size	5/6	,,	11/6
Gelatine Size	6/6	,,	10 o
Dry B.A. Pieces	50/o	,,	55/o
,, English Pieces	35/o	,,	45/o
Wet ,, ...	8/6	,,	9/6
,, Sheep Pieces	3/o	,,	4/o
Buffalo Hide Shavings	32/o	,,	40/o
,, Picker Waste	32/o	,,	35/o

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4/10½	5/-	5/3	5/4½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS.—There is a better enquiry.

Mineral Black ...	cwt. 3/6	PASTE COLOURS with	
do. superior ...	,, 4/o	60% of colour, as follows:	
Pure Ivory Black	,, 12/o	Orange Pulp ...	cwt 40/o
Ochre	,, 2/3	Golden Yellow Pulp	50.0
French J. C. Ochre	ton 60/o	Lemon ,, ,,	cwt 30/
Chrome (pure) ...	cwt. 40/o	Prussian Yellow ,,	36/6
Red Oxide	,, 4/6	Green (free of arsenic	28/o
Umber, Devonshire	,, 50/o	Paste Blue, 20% ..	18/o
do. Turkish ...	,, 40/o	,, 33% ; 26/o ; 45%	45/6
Lamp Black ...	,, 5/o-7/6	Imperial Yellow (dry)	16/6
Ultramarine (pure)	35/o-45/o	(less 2½% d/d)	
Cochineal ...	lb. 4/3-2/o		

METALS.—LONDON: COPPER steady and slightly dearer; TIN rather firmer; LEAD easier. Tuesday's official closing prices:

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	51	1	3—51	6	3	
,, three months	51	7	6—51	12	6	
Tough	54	0	0—54	10	0	
Best selected	55	0	0—55	10	0	
Strong Sheets	62	0	0—			
TIN—						
Fine foreign, cash	65	8	9—65	18	9	
,, three months	66	0	0—66	10	0	
LEAD—						
Spanish...				12	15	
English...	12	17	6—13	1		

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MINERALS.—There is an improvement in the demand for CHINA CLAY. SATINITE and SNOWDRIFT are in good request. A steady trade is passing in FRENCH and ITALIAN CHALKS, MINERAL WHITE, and PATENT HARDENINGS.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine... ...	28/0 less 2½ %	del. Lancashire...		38/0
Pottery Super.	24/0 ,,	,,	... ...	34/0
Ball Seconds ...	20/0 ,,	,,	... ...	30/
Seconds	15/0 ,,	,,	... ...	25/0
Thirds	11/0 ,,	,,	... ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 10/6 to 23/6, bags 4/0 and casks 9/6 per ton extra: delivered Lancashire 38/0 to 42/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 58/0, 64/0, 72/6, and 77/6 per ton, according to quality, less 2½ %.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 2/6 per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-.
Patent Hardening (2 ton lots) f.o.r. Lancs., £3 5/0.
Snowdrift (Paper Toughener), in ton lots, 12/- per cwt
Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.
Magnesite (in lump) 39/6 to 46/0 per ton.
Albarine, £3 del. mills.
Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.
Asbestos, brown grades, £14 to £14 12/6.
Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.
Bauxite, minimum alumina, 60 %, 15/4 f.o.b.
Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.
Satinite, £3 to £3 6s. 0d., in casks, f.o.b Liverpool or Manchester.
Whiting, f.o.b., 10/6 to 12/3 per ton.
Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.
Hydrate of Alumina, £12 10/0.

LIME—The present price is 10/6 per ton f.o.r

BALING TWINE.—Prices:

	Nick.	Medium.	Fine
Hemp ...	4d. per lb.	4½d. per lb	5d. per
Mixed ...	3½d. ,,	4d. ,,	4½d. ,,

W. FRIEDLAENDER,

60, Fenchurch Street,

Telegrams: "LANDFRIED—LONDON." LONDON, E.C.

Sulphite, Sulphate & Soda Pulps.

BLEACHED & UNBLEACHED,

IN PURE STRONG FELTY QUALITIES.

JAMES KENYON and SON,

DERBY STREET MILLS,
BURY, LANCASHIRE.

ALL FELTS for Papermakers.

Telegrams: "KENYON, BURY."

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls
BELGIUM	1341	—	40
DENMARK	54	—	—
FRANCE	1147	3	—
FINLAND	190	—	—
GERMANY	2343	15	127
HOLLAND	10663	13	—
JAPAN	41	—	—
NORWAY	5763	—	467
SWEDEN	2184	—	—
U.S.A.	1072	240	569

Including the Following:—

Quantity	From	Importer	Port
23 bales	Christiania	Bott & Co	London
47 ,,	,,	Davies & Royle	,,
81 ,,	,,	F. E. Foulger	,,
17 ,,	,,	Spicer & Son	,,
15 ,,	,,	Felber & Co	,,
30 ,,	,,	Evans & Adlard	,,
12 ,,	,,	J. Hamilton	,,
105 ,,	,,	Becker & Wagner	,,
82 ,,	,,	Alsing & Co	,,
112 ,,	,,	Cookson & Co	,,
3 ,,	,,	C. Davidson & Sons	,,
50 ,,	Christiansand	F. Clayden & Co	,,
33 ,,	,,	Cookson & Co	,,
66 ,,	,,	J. Spicer & Son	,,
66 ,,	,,	Crabb & Co	,,
81 ,,	,,	C. Morgan & Co	,,
90 ,,	,,	W. Guppy	,,
91 ,,	,,	Becker & Wagner	,,
332 ,,	Drammen	Crabb & Co	,,
51 ,,	,,	Cookson & Co	,,
153 ,,	,,	Becker & Wagner	,,
99 ,,	,,	F. E. Foulger	,,
5 ,,	,,	A. J. Brown & Co	,,
31 ,,	,,	G. F. Green & Co	,,
2 ,,	,,	L. Lewis & Co	,,
3 ,,	,,	J Hamilton	,,
1 ,,	,,	J. Spicer & Son	,,
57 ,,	,,	Felber & Co	,,
407 ,,	,,	L. Henle	,,
373 ,,	,,	Alsing & Co	,,
80 ,,	,,	R. Lloyd	,,
299 ,,	,,	H. Peron & Co	,,
0 ,,	Danzig	Elkan & Co	,,
17 ,,	Gothenburg	Davies & Royle	,,
100 ,,	,,	Grosvenor & Co	,,
74 ,,	,,	Becker & Wagner	,,
16 ,,	,,	Brown, Brough & Co	,,
30 ,,	,,	Spicer & Sons	,,
5 ,,	,,	C. Morgan	,,
81 ,,	,,	Crabb & Co	,,
337 ,,	,,	J. Eberstein	,,
631 ,,	,,	Skarblacka & Co	,,
27 ,,	,,	W. J. Jacobs	,,
3 ,,	,,	Schenkenwald & Co	,,
3 ,,	,,	E. Lloyd & Co	,,
14 ,,	,,	R. L. Lundgren	,,
10 ,,	,,	Henderson & Davies	,,
5 ,,	Marseilles	J. Spicer & Sons	,,
9 ,,	New York	Wyckoff & Co	Southampton
97 ,,	Skien	J. Spicer & Sons	London
7 ,,	,,	J. Hamilton	,,
243 ,,	Stockholm	Schenkenwald & Co	,,

NEW PATENTS.

APPLICATIONS.

6,280. Improvements in and relating to calendering machinery. A. G. Brookes.

6,651. Improvements in the preparation of cellulose. F. Buhler.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

1897.

5,948. Means and apparatus for discharging, neutralising, or removing electrical charges from paper and like material during and after the process of manufacture. Rogers and Mordey.

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	9545	270	604
AFRICA	91	70	172
ARGENTINE	—	63	17
BELGIUM	133	29	109
CAPE COLONY	—	2	120
CHILI	—	4	11
CANADA	—	—	14
CHINA	25	22	542
DENMARK	—	—	19
EGYPT	61	87	2
FRANCE	836	4	12
FINLAND	—	—	15
GREECE	—	—	27
HOLLAND	23	19	77
INDIA	533	402	500
JAPAN	223	14	164
MAURITIUS	—	3	14
MALTA	—	—	17
NEW ZEALAND ...	349	135	1173
PORTUGAL	—	—	9
PORT SAID	—	—	2
SWEDEN	—	—	63
SPAIN	—	118	—
S. SETTLEMENTS ...	63	—	—
U.S.A.	362	55	2
W. INDIA	—	—	2

FROM GLASGOW.

	Printings. Cwts.	Writings. Cwts.	Various. Cwts
AUSTRALASIA	1573	949	69
BELGIUM	23	—	—
CANADA	—	38	—
HOLLAND	—	—	6
INDIA	430	31	192
NORWAY	—	—	1
W. INDIES	52	—	—

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

400 b	Amsterdam	London	880 b	Rotterdam	Liverpool
218 ,,	Ghent	,,	76 ,,	,,	Goole
240 ,,	Cologne	,,	113 ,,	Copenhagen	Hull
1600 ,,	,,	,,	5227 ,,	Rotterdam	Bristol
1956 ,,	Haugesand	,,			

WOOD PULP BOARDS.

730 b	Hambro	London	1501 b	Boston	Bristol
835 ,,	Stettin	,,	52 ,,	New York	,,
80 ,,	Hambro	Hull	120 ,,	Copenhagen	Manchstr
33 ,,	Gothenburg	,,	10 ,,	Malmo	Grimsby
84 ,,	Hango	,,			

MILLBOARDS.

5749 b	Harlingen	Hull

PASTEBOARDS.

8 b	Gothenburg	Granton	343 b	Amsterdam	London
1 c	Rotterdam	Grngmth	865 ,,	New York	,,
1 b	Hamburg	Leith	400 ,,	Haugesand	,,
1 c	,,	,,	140 ,,	New York	Bristol
652 b	New York	Liverpool			

THE WORLD'S PAPER TRADE REVIEW.—"A Journal in which we have great confidence . . . . well aware of its circulation and ability."—THE GROVE CHEMICAL CO., LIMITED.

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A. WERTHEIM & Co.,

HAMBURG,

SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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Tuckenhay Paper Mills.

Messrs. Turner, Symons and Co., Ltd., and the Original Society of Papermakers.

Most people in the hand-made paper trade are no doubt aware of the fight which has been going on for some years between Messrs. Turner, Symons and Co., Ltd., of the Tuckenhay Paper Mills, Totnes, Devonshire, and the Society of Original Papermakers. It is only within the last few weeks that Society men from Maidstone have commenced work on the hand side of the mills, whilst on the other side the patent vat mould machine, which has now been perfected for certain kinds of paper, is at work. A few days since the new arrivals from Kent, together with the firm, entertained all the male employees to dinner, and some interesting facts were made known with respect to the recent history of the concern.

Mr. F. BLEW proposed "Success to the firm of Messrs. Turner, Symons and Co., Ltd."

Mr. HENRY SYMONS, J.P., managing director, responded and reviewed the history of the mill. Mr. Turner, he said, conducted the mill successfully for a number of years, and it was known to produce the best paper the trade could make, as they had such good water and pure air. The mill was lying vacant, and he (Mr. Symons) thought he could turn it to account, but he found the undertaking much more arduous than he anticipated. After acquiring the water rights and erecting a splendid mill, the Society was invited to send men to work it, but he was very disappointed with those that were sent, as many hundreds of pounds worth of paper was spoilt. Instead of sending men to confer with him, the Society sent pickets to the district, and not only that, but he believed they sent money to people to get away the hands and to wilfully damage the manufacture. Not content with this, they got Mr. Sidney Buxton, M.P., to ask a question in the House of Commons with respect to the rate of wages paid at Tuckenhay, and Sir John Gorst replied that he was not aware that the firm were paying less than the standard rate. He (Mr. Symons) then wrote Mr. Buxton, who apologised, and said he had been misinformed by the Original Society of Papermakers of Maidstone. When a man from the Bank of England Mills was called in to advise him on the matter, the men went on strike at a minute's notice. However, he thought he could manage the paper trade, but found that skilled hands were necessary to make a good sheet of hand-made paper; and a large amount of retree and broken paper was made. He believed Tuckenhay to turn out the best paper in the market, as their water contained specially good qualities for making their class of paper, and it remained for the men who were now working it to make the mill one of the foremost in the country. The trade of the country was on the increase, although £8,000,000 worth of paper was imported last year. The English had to compete with the Germans, Italians, and Dutch, and the only way to meet this was to make a good article at a low price. A few years since his men were not in favour of the patent vat mould machine being erected, but recently they had brought it to perfection for certain sorts of paper, although, perhaps, it would not bring in more profit than the vats. He had spent a deal of time and money on the mill, but he believed their original process was the best for reprints and books that had to be kept a number of years. He hoped now, however, their difficulties were past. If the society had met them, instead of being so conservative and allowed the foreigner to come in and take away their orders (some of which were now being retained in the country by them), matters would have been amicably settled years ago, and a much larger business done. He was content to allow bygones to be bygones, and he was glad the men had met him, and come down from the society to work the mill, which, he hoped, was the beginning of a prosperous career.

Mr. MILLBOURNE submitted the toast of "The Paper Trade," saying although he was a stranger to many of them, he hoped they would get on well together, and make their interests identical with those of their employer. He believed there was a "boom" in hand-made paper coming.

Mr. WILES (manager), Mr. J. B. TOSSWELL (secretary), and Mr. JAS. BOURNE responded. The latter, who was secretary of the Original Papermakers' Society, said they could understand the position hand-made papermakers were placed in, as there were only 12 or 13 hand-made paper mills going in the country, against 400 machine mills. He was not afraid of the foreigner so far as hand-made paper was concerned, and he had no doubt of being able to bring about success at Tuckenhay, where he was proud to find there was such a splendid mill.

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AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
1 cases	Antwerp	F. A. Mettler	New York
2 ,,	,,	Dingelstedt and Co	,,
12 ,,	,,	P. Ruttmann	,,
12 ,,	,,	J. W. Hampton	,,
18 ,,	,,	A. V. Benoit	,,
20 ,,	,,	E. G. Soltmann	,,
13 ,,	,,	Vandergrift and Co	,,
12 ,,	,,	De Jonge and Co	,,
115 ,,	,,	Sheldon and Co	,,
36 ,,	,,	Kupfer Bros	,,
3 ,,	,,	O. T. Meloni	,,
136 ,,	,,	Sheldon and Co	,,
38 ,,	,,	Dritzen and Co	,,
20 ,,	,,	J. W. Hampton	,,
17 ,,	,,	P. Ruttmann	,,
1 ,,	,,	Doab, Klauber & Co	,,
10 ,,	,,	Stiner and Co	,,
21 ,,	,,	G. Gennert	,,
7 ,,	,,	Merchants' Despatch	,,
12 bales	Hamburg	Dingelstedt and Co	,,
3 cases	,,	A. Kraut	,,
2 ,,	,,	H. Boskowitz	,,
7 ,,	,,	Meyer and Co	,,
21 ,,	,,	Hartung and Co	Philadelphia
36 ,,	,,	To order	,,
18 ,,	,,	C. Beck Paper Co	,,
43 ,,	Havre	Druckleib and Co	New York
50 ,,	,,	American Tobacco Co	,,
1 ,,	Liverpool	Anthony and Co	,,
6 ,,	,,	B. and O. Meyer	,,
1 ,,	,,	R. Hoe and Co	,,
11 ,,	London	Lawrence and Co	,,
5 ,,	,,	Favor, Ruhl and Co	,,
5 bales	,,	Baldwin Bros & Co	,,
85 ,,	,,	Tradesmen's Nat. Bank	Philda
5 cases	Rotterdam	Elmer and Amend	New York
4 ,,	,,	Favor, Ruhl and Co	,,
14 ,,	,,	De Jonge and Co	,,
3 ,,	,,	Sheldon and Co	,,

MANILLAS.

7 bales	Antwerp	Train, Smith & Co	Boston
54 coils	Glasgow	,,	,,
84 bales	London	,,	,,
40 ,,	,,	Butterworth and Co	,,
507 coils	,,	Dutton and Co	,,
10 bales	,,	,,	,,
208 ,,	,,	Miller and Co	,,
86 ,,	,,	Castle and Gotheil	New York
43 ,,	Liverpool	Jessup & Moore	,,
207 ,,	,,	Hempstead and Co	,,
110 ,,	,,	Libmann and Co	,,
250 ,,	,,	Downing & Co	,,
156 ,,	,,	Butterworth and Co	Boston
61 ,,	,,	Schulz and Ruckgaber	,,

RAGS.

241 bales	Antwerp	Salomon Bros	New York
54 ,,	,,	Castle & Gotheil	,,
432 ,,	,,	Train, Smith and Co	Boston
71 ,,	,,	Castle and Gotheil	,,
119 ,,	,,	Salomon Bros	,,
50 ,,	Glasgow	Train, Smith and Co	,,
158 ,,	Hamburg	Salomon Bros.	,,
20 ,,	London	Parsons Paper Co	,,
221 ,,	,,	Train, Smith & Co	,,
331 ,,	,,	Butterworth and Co	,,
178 ,,	,,	E. P. True	,,
193 ,,	,,	Butterworth and Co	,,
406 ,,	,,	Train, Smith & Co	,,
76 ,,	,,	Castle and Gotheil	New York
203 ,,	,,	,,	,,
14 ,,	,,	A. Kazenstein	,,
39 ,,	,,	Atterbury Bros.	,,
80 ,,	Liverpool	Schulz and Ruckgaber	Boston
49 ,,	Rotterdam	A. Katzenstein	New York

CHEMICAL FIBRE.

Quantity	From	Importer	Port
60 tons	Antwerp	R. Helwig	New York
10 ,,	Hull	F. Bertuch and Co	,,

BLEACHING POWDER.

96 cks.	Antwerp	Klipstein and Co	New York
119 ,,	,,	Fuerst Bros	,,
71 ,,	,,	F. A. Reichard	,,
92 ,,	,,	Klipstein and Co	,,
50 ,,	,,	Billings, Clapp & Co	Boston
20 ,,	Hull	J. L. & D. S. Riker	New York
101 ,,	Hamburg	Roessler & Hasslacher	Boston
234 ,,	Liverpool	J. L. & D. S. Riker	,,
185 ,,	,,	,,	New York
150 ,,	Marseilles	F. A. Reichard	,,
113 ,,	,,	Train, Smith & Co	,,

CAUSTIC SODA.

100 drums	Liverpool	J. L. & D. S. Riker	New York
100 cks.	,,	,,	,,
200 drums	,,	Hill's Son & Co	,,
90 ,,	,,	Welsh, Holme and Co	,,
50 ,,	,,	To order	Boston

SODA ASH.

17 cks.	Liverpool	B. P. Ducas Co	New York
1314 bgs.	,,	Wing and Evans	,,
32 cks.	,,	,,	,,
100 ,,	,,	J. L. and D. S. Riker	,,
36 ,,	,,	Wing and Evans	Boston
180 bgs.	,,	,,	,,

SIZING.

49 bgs.	Antwerp	Baeder, Adamson & Co	Boston
9 ,,	,,	,,	,,
109 ,,	Liverpool	To order	,,

SULPHUR.

667 bgs.	Liverpool	Linder & Meyer	Boston

WASTE PAPERS.

62 bales	London	H. Dutton and Co	Boston
70 ,,	,,	Butterworth and Co	,,
209 ,,	,,	Wheelwright Paper Co	,,
60 ,,	Glasgow	To order	Philadelphia

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GERMANY.

SPIRITS FROM WOOD.—A German contemporary reports that Herr E. Simensen has invented a process by which he can make alcohol from wood. It is known that potatoes produce alcohol, but they are not very cheap, but shavings of wood could be had almost for nothing, and the question is only how do the results of both materials correspond to each other. It is found 100 kilos shavings give 6·5 litres alcohol. Potatoes give 14·50 to 15 litres.

THE BADEN FACTORY INSPECTORS report that last year in 115 establishments in the paper trade, 5,771 male and 1,715 female workers were employed; of the latter 342 were either married or widows. The workers took very little interest in discussing their affairs with the inspectors.

SPAIN.

SPANISH PAPERMAKERS COMBINE.—*La Industria Papelera* states that fierce competition has placed Spanish papermakers in such a desperate condition that they have at last decided to combine, with the view of forming an association with the object of bettering prices, etc. From the statistics on hand we learn that there are 54 mills working 89 machines. The low selling prices are said to have been caused by foolish competition. The association intends to regulate the sale of paper by the weight, to order a uniform number of sheets per ream (500), and to quote sizes in centimetres. Also the lowest weight for the various sorts is to be fixed, for ordinary papers 3% margin of weight is allowed, for packings over 4%. The average only goes by the ream, irregular sheets in the same ream do not justify rejection of a parcel. Small differences in purity, toughness, or colour must be passed. Less than half a ton cannot be ordered of a size and weight. Second choice with a deduction of 10 per cent., and third choice with that of 20 per cent. must be accepted; if the order is more than a ton, 15 per cent. more or less than the quantity ordered may be delivered. The wrappers are counted in the weight of the paper. Cases are charged extra. Prices are at the railway station nearest the mill. These terms were accepted.

CONCERNING the terms suggested by the newly-formed combine of Spanish papermakers, the dealers lodged a complaint, and it was then agreed that, on orders of 25,000 pesetas, 1 per cent., and with increasing quantities up to 250,000 pesetas, 6 per cent. discount should be allowed.

UNITED STATES.

THE PEGAMOID LEATHER, TEXTILE AND PAPER CO. has been incorporated under the laws of New Jersey, with a capital stock of 1,000,000 dols., all of which is to be paid up when business is begun. The company is to manufacture and import paper of all kinds, and also all kinds of leather goods and similar articles. The incorporators are: Messrs. Theodore A. Dodge, Arthur W. Pope, and Edward H. Haskell, of Boston; Thomas Russell, of Montclair; William B. Pierce and Gilbert I. Herbert, of New York, and Henry L. Gilbert, of Garden City, L. I.

A SCOTTISH ORDER.—Mr. J. J. Lowden, of Boston, Mass., has received from the Guardbridge Paper Co., of Fife, an order for a "Lowden Steam Regulator."

THE capacity of the mills of the Rumford Falls Sulphite Co., of Rumford Falls, Me., is to be increased to 100 tons daily.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included the following:—To London, 2,510 packages and 1,599 bundles; Liverpool, 801 bundles and 66 cases; Southampton, 66 packages; Hull, 373 packages and 526 bundles; Dundee, 82 packages; and Glasgow, 387 packages. The shipments to Antwerp were 81 cases; Bremen, 4 packages; Havre, 2 cases; Hamburg, 4 packages; Rotterdam, 195 packages; Argentine, 27 cases; B. Guinea, 120 packages; Brazil, 441 packages; Australasia, 165 packages; B. Honduras, 71 packages; B. W. Indies, 1,058 packages; Japan, 74 cases; Mexico, 492 packages; and N. Zealand, 529 packages.

AFTER TEN YEARS.—An advice from Bangor states that after over ten years in the insolvency court, the case of the Lincoln Pulp and Paper Company of Lincoln, Me., has finally been closed by the declaration of a dividend of 1.35-100 per cent. on an indebtedness of over 53,000 dols. The company was formed by St. John, N. B., capitalists, and the enterprise lost money from the start. Most of the assets were swallowed up in the payment of workmen's claims.

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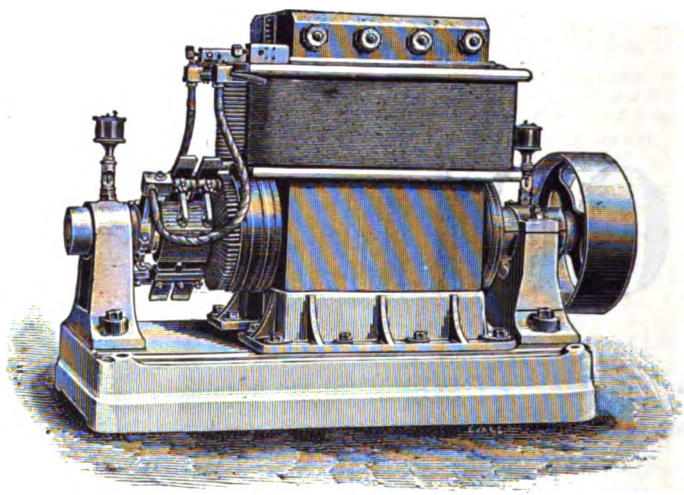
THE APPLICATION OF
Electric Motors to Printing Presses.

ALTHOUGH printers and manufacturing stationers in this country have been somewhat slow to show in practical fashion their appreciation of the advantages to be derived from the application of electricity as a motive agency, there are now evidences available that a more extended use of the subtle power is imminent. Several leading printing firms have lately installed slow-speed electric motors in their premises with, we understand, satisfactory results in everyday running. Under these circumstances, we have thought it would be doing many of our readers a service if we once more dealt with the subject in these columns.

One important consideration in connection with electric motors suitable for driving printing presses is that the most useful types of them are so made that they may be connected direct with the printing machines. They may, in short, be attached to the presses themselves, to all intents and purposes forming parts of them. It is claimed for them that they are in practice more efficient than where belting, shafting, or gearing are employed, and, at all events, there is a welcome absence of belts, gearing, noise, and dirt, which are inseparable, in some degree at least, from the means ordinarily adopted for the transmission of power. It is not, of course, always either practicable or desirable to have any machine actuated absolutely direct. Under such circumstances a high degree of economy can be effected by grouping the machines and driving them, by means of countershafting and belts, from one motor of adequate horse-power. In the group principle there is almost the same saving in power, as the electro-motive force consumed is only that which is required to do the specific amount of work represented by the number and size of the machines actually in use.

There is, then, a good deal to be said for both methods of employing the electric motor in driving printing presses, and we propose to treat them fully in successive articles. For the present, however, we will confine ourselves to the plan of driving by means of belting, and in doing so propose to deal in this article with a type of electric motor which has recently been applied to the driving of printing presses by Messrs. Siemens, Brothers and Co., Ltd., the well known firm of electric and telegraph engineers, of 12, Queen Anne's Gate, London, S.W. This type of electric motor has been successfully installed in several English newspaper and other printing offices.

One example of the Siemens Motor is illustrated herewith, and represents the



THE SIEMENS' MOTOR.

firm's most recent and improved design in motors suitable for the purpose to which we more particularly refer in this article. In this motor the drum armature rotates between the poles of a vertical horse shoe magnet. The field magnet cores consist entirely of the best quality of high permeability wrought iron or mild steel, according to circumstances, and are tooled all over. The winding of the field magnets consists of turns of high conductivity copper wire or strip, well insulated and wound on bobbins, with insulated wrought iron bodies and substantial wooden cheeks. The whole bobbin is so made that it is easily removeable from the core of the magnet when this is necessary.

Coming next to the armature, we find that the core of the drum consists of discs of charcoal iron securely keyed to a steel shaft. The whole is turned and insulated with a special material which, we are assured, is capable of retaining its

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insulating and mechanical properties at the highest temperature to which the armature can rise when running continuously with a full load. The winding of the armature consists of high conductivity copper bars, insulated individually with the special material we have already mentioned, and covered tape, which is also specially treated. The bars are joined up by means of curved end connections, which are insulated with tape and mica. The winding is held in position and driven by wooden pegs, and is secured to the core by circumferential bands, which are properly insulated and of special construction.

For the rest it may be stated that the commutator is built up of segments of hard-drawn copper, of high conductivity. These are made with an adequate amount of wearing surface, and are insulated throughout with mica. A strong ring of cast iron is mounted concentrically with the armature, and can be rotated in such a manner that the position of all the brushes can be readily and also simultaneously adjusted. This ring carries two gun-metal spindles, which, however, are insulated from it by means of ebonite, and on these spindles are mounted the brush-holders. These are built on substantial lines, and have holding-off catches. They are held up to their work by springs, which are readily adjustable so that the degree of tension can be regulated as may be necessary. The brushes themselves are made of high conductivity copper gauze. The terminals, which are mounted on the wooden cheeks of the field magnet bobbins, are made especially strong. The whole machine is bolted to a base-frame. There are two bearings, a 10-inch pulley for belt driving, and a fly-wheel 2-feet in diameter.

It will be understood from the specification which we have given that while there is no excessive weight in the machine as a whole, it is built on substantial lines, which make for durability and steady running. It is accurately as well as neatly finished, and has been designed in a manner calculated to ensure a high degree of electrical and mechanical efficiency.

For driving printing presses by means of belts, either individually or in groups, such a motor as the one we have described is well adapted. It is now quite within the range of the electrical engineer to run printing machinery either direct, or as nearly so as circumstances permit, without the intervention of unnecessary shafting, gearing or belting, provided, of course, that a supply of electricity is available. The above described type of motor is equally suitable for this purpose, the only required alteration being to replace the pulley by a special coupling and possibly to alter the shape of the bed-plate. In many cases the current can be obtained from the local lighting mains, and if there be an accumulator on the premises—and in some cases without one—every press in a printing works can, if desired, be driven independently. The majority of the motors which are supplied by Messrs. Siemens Brothers and Co., Ltd., are arranged for coupling direct to the machines to be driven. By this system great waste of power is saved, and immense economy in wear and tear effected to the printer who avails himself of this method of driving. The method is one which commands itself to every thoughtful printer who desires not only to experience convenience, expedition, and economy, in the conduct of his business, but to be fully abreast of the times in the matter of mechanical equipment. — *British and Colonial Printer and Stationer.*

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General Notes.

WILL.—The will of the late Mr. Ernest Eugen Sabel, of 85, Cannon-street, City, paper merchant, who died on December 13th last, was proved on March 9th last by his executors, Mrs. Emma St. George Sabel, his widow, Mr. Joseph Storrs Bevington, and Mr. Julius Hoss, who have returned the value of the personal estate for probate as being of the declared value of £101,252 9s. 10d. gross, and £99,513 0s. 9d. net. To his widow the testator bequeathed £1,000, and a further sum of £4,000, his collection of butterflies, his household furniture and effects. To his daughter Edith Emily, £2,000, and an annuity during the widowhood of Mrs. Sabel of £400. To his executor, Mr. Bevington, £200; his clerk, G. L. Williams, £250; and his clerk, W. Dockett, £100; to the German hospital, £200; the Society of Friends of Foreigners in Distress, £100; and the German Society of Benevolence, £100. The testator leaves his residuary estate in trust to pay the income to his widow during her widowhood, and in the event of her remarrying an annuity of £500 for life; at the death of Mrs. Sabel, or her remarrying, a legacy of £10,000 is to be paid to the testator's daughter, Edith Emily, and the residuary estate is to be held in trust for his said daughter and her issue.

L. S. DIXON AND CO., LTD., LIVERPOOL.—When our representative was in Liverpool the other day he paid a visit to the premises of Messrs. L. S. Dixon and Co., Ltd., School-lane, a firm that is well known in the trade for their extensive wholesale and export dealings in papers, cards, cardboard boxes, and special papers for printers' use in stereotyping. He found all departments busy, and his special attention was called to a few of the newer lines that are turned out by this enterprising house. Among these may be noticed the new paper called "Studio Covers," a heavy self-coloured material that is adaptable for pamphlet and book covers, circulars, catalogues, etc. It is made in several shades, including gold, moss, granite, and terra cotta, and is just the thing that many a printer would be glad to know where to get. The surface is excellently adapted to take either letterpress or litho, and the price is moderate. This paper is made in 18 by 23, 40 lbs., at 10s. per ream; and 20½ by 30½, 60 lbs., at 15s. per ream. Another good line for covers is the "Crepon," a heavy paper with a kind of crinkled tissue surface that lends itself to artistic treatment and is most suitable for any job where a rich effect is wanted. "Crepon" is made in double medium, 23 by 36-in., 80 lbs., and may be had in white, pink, apple, and olive. Carbons and manifolds are a specialty of the firm, the "Mulcartis" registered series of commercial carbon is cleanly, durable, and cheap, while the "Knoil" dry manifold, to use with it, is easy to print, easy to rule, and easy to handle, and there is no oil to set off. Demy blottings are made in red, white, lilac, and buff, and are sent out banded in quires, and packed in half reams; the demy 38 lbs. blotting is a good line that could be handled with profit by all stationers. Messrs. Dixon and Co. deal extensively in tag labels, their "Crimson Washer" band being well known; all sizes are made and supplied at cheap rates, while they can be had either singly or in gangs of four for printing. Corrugated packing paper is another specialty; it is made in rolls of 250-ft., 26-in. wide, at 9s. per roll, with a very considerable reduction on taking a quantity. Perhaps there is no firm better known for stereotype matrix papers than Messrs. Dixon and Co., and their sample book for printers contains tissues, bleached and unbleached, stereo blottings, improved backings and browns, and special packing felts, of various qualities, and to suit all the requirements of different processes of flong making. Dixon's stereo papers are in use in nearly all the principal newspaper offices in the United Kingdom, as well as in America, on the continent, and in the colonies.

ACID FILTERING PAPER.—A writer in the *Journal de Pharmacie et de Chimie* reports that according to his observations filtering paper, heated with certain organic acids, absorbs part of the acid. His tests showed that a round filter of 12 centimeters diameter, consisting of ordinary filtering paper, absorbed 0·0015 grammes of sulphuric acid (H_2SO_4). So-called French Berzelius paper proved perfectly neutral. Some filtering paper made by Schleischer and Schull, which was washed with hydrochloric and fluorhydric acid, contained acid corresponding to 0·0014 grammes (H_2SO_4). A Swedish Berzelius paper, made fifty years ago, contained acid equivalent 0·0003 grammes of H_2SO_4. For tests which may be seriously affected by the acid contained in the paper, the author recommends removing the acid by protracted washing with boiling water.

THE
WORLD'S PAPER TRADE REVIEW,
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THE WORLD'S PAPER TRADE REVIEW, the leading European exponent of the paper trade.—*American Paper Trade and Wood Pulp News.*

The completeness of its Market Reports have made it indispensable to the Paper and Paper Stock Trades, and its dependability is recognised throughout Europe and America.—*The Printers' Register*, London.

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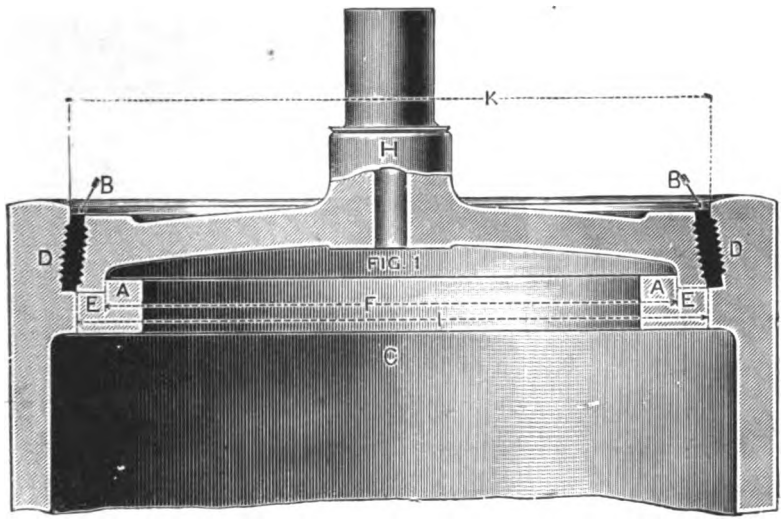

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The World's Paper Trade Review

A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

Vol. XXIX. No. 14. LONDON: April 8, 1898. EVERY FRIDAY. PRICE SIXPENCE.

Variegated Coloured Papers

SEVERAL METHODS OF PRODUCTION PATENTED.

A patent has recently been granted to Mr. O. H. Stone, of Erdington, near Birmingham, relating to the production of variegated or mottled coloured papers in two or more or a variety of colours, which colouring is performed during the time that the paper is in the state of pulp and in the process of manufacture.

The process consists in applying, by sprinkling or otherwise, dyes or other colouring matters to the pulp, preferably at the "wet" end of the machine, although the method is equally applicable to the application of dyes or colours to the pulp at the "dry" end of the machine.

According to one process the pulp, after being manipulated in the ordinary way, is served on to the machine, and whilst it is being carried forward the surface is sprinkled with two or more colours or dyes differing from the colour of the pulp, which sprinkling of dyes, on coming in contact with the moist pulp or paper in a wet state, both sink into the same and diffuse themselves in varying degrees within and over the parts of the material being coloured. Paper pulp, for instance, having a grey body colour, and whilst still on the machine, is sprinkled on the surface with dark green dye or other colour, the spots of which, after falling, diffuse or disperse themselves over and into the material, thereby producing a variegated, cloudy, mottled, or marbled paper, which, after leaving the machine, is calendered or glazed or otherwise finished by well-known processes.

Where two colours are required in the mottling, then the paper or pulp is or may be either sprinkled with two coloured dyes at the same time, or a second colour is served immediately after the first, and a third colour may be applied immediately after the second, and so on, according to the number of colours which the paper is required to be served with.

Instead of sprinkling on the dye or colour, which may be effected by means of a rose attached to a syringe or receptacle, or other means, the same may be served by dabbing the surface with a soft brush, sponge, or the like charged with the dye or colour, and instead of colouring the paper in irregular mottlings or cloudings, the dye may be applied in lines, zig-zags, or other patterns, either by brushes or other servers, or by mechanical means.

As another modification, instead of applying the dye or colouring matter in a liquid state, the dye may be in the form of powder sprinkled or applied to the wet end of the machine. Ordinary aniline dyes may be employed, as they disseminate and sink into the pulp or paper more readily on coming into contact with the wet or moist surface of the material during the process of manufacture, and such dyes should be of a strength in accordance with the tone or depth of the colour required to be produced.

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Improved Pulp Beating Machinery.

Messrs. Masson, Scott and Co., Ltd., the well-known papermakers' engineers, of Battersea, S.W., have recently been granted a patent covering improvements in pulp beating machinery, particularly relating to that class of machinery wherein conical beater rolls are employed.

In such beating engines, as hitherto constructed, a single conical beater roll of a relatively long length and acute conicality is rotated within a corresponding conical casing, a sufficient adjustable clearance being left between the beater roll and the casing, each of which is fitted with peripheral knives in a manner well understood. The patentees point out that this construction is practically disadvantageous, in that the treatment of the paper stuff thereby cannot be sufficiently well regulated to meet the practical requirements of the considerably different varieties of paper stuff which require to be treated, as, for example, for some thereof, a single passage through the beater is sufficient to finish the material, whereas other fibres require to be passed repeatedly through the beater. Such construction is, moreover, disadvantageous, in that the reaction due to the centrifugal action of the beater on the stuff passing through the casing causes a violent end-thrust both on the casing and on the beater-shaft, necessitating the application of thrust bearings to offer the necessary resistance, but which entail friction and greatly increase the power required to drive the beater roll.

To avoid these and other practical disadvantages incidental to such shaped beater rolls, the patentees employ, in combination, a pair or series of conical beater rolls mounted on a common driving shaft with their respective conicalities tapering in opposite directions, the one set or series operating to neutralise the end-thrust of the other set or series; corresponding conical casings fitted with means of receiving and discharging the inflow and outflow of the paper stuff; and means of adjusting the casings and beater rolls in the desired relation to each other. Further, in combination, a beating engine, a furnishing con'ainer fitted with a circulator and with means of delivering the paper stuff, being beaten repeatedly, to the beating engine and finally to the stuff chest, and a mixing container fitted with a circulator and with means of delivering the paper stuff being mixed repeatedly to the mixing container, and finally to the furnishing container, such containers operating to render the operation of the beating engine continuous.

MANCHESTER STEAM SHIP COMPANY.—It is stated that the Manchester Ship Canal Co. have successfully completed negotiations with the view of building a fleet of large cargo steamers to trade direct between Manchester, Montreal, Boston and other ports.

The Percentage of Clay Retention.

On this subject, referred to in our issue of March 25th, Mr. David Crabtree, of Joliette, Que., Canada, supports the view of "Manufacturer," viz., that 60 per cent. of the original is the correct amount of clay retained in his paper.

Mr. Crabtree states that in plain language it is as follows: "'Manufacturer' puts to his stock 200 pounds of clay, which mixture produces 1,000 pounds of paper. On testing the latter he finds 12 per cent. of ash, which would figure out on the 1,000 pounds of paper as 120 pounds. Therefore, from the original amount of 200 pounds he only gets 120 pounds, a loss of 80 pounds, or a retention of only 60 per cent. Assuming 'Manufacturer's' data to be correct, there is certainly a greater loss of loading than there ought to be. Furnishing clay either hot or cold does not affect the results either one way or the other, so far as my experience goes. I have tested scores of papers which have been loaded to somewhat the same proportions as those named, and have never found less than 70 per cent. as the amount retained, and sometimes as high as 90 per cent. I am inclined to think that 'Manufacturer's' data are not quite correct. For instance, does he take into consideration the amount of water in the clay? China clay generally contains from 6 to 8 per cent. moisture absorbed from the atmosphere, and in addition to this 8 to 12 per cent. water, chemically combined with it. The former is, of course, nearly all eliminated in passing over the dryers, but the latter is only got rid of in the process of heating the paper to be tested to a red heat in a crucible. It follows, therefore, that to the amount of ash found in the paper by test a quantity from 14 to 18 per cent. must be added to bring the ash to the terms of the original clay. In testing paper for ash it is therefore essential that the exact amount of water in the clay, both absorbed and combined, should be known. The retention of clay in paper is also subject in a great measure to the stock used and to the treatment of the latter in the beater. Nicely beaten stuff will always carry a larger percentage of loadings than that which has only had an indifferent treatment."

THE EXPORTS OF PAPER at New York according to the last weekly list to hand, included the following:—To London, 4,458 packages, 1,251 bundles, and 2 cases; Liverpool, 202 packages and 173 cases; Manchester, 181 packages; Leith, 108 packages; Hull, 10 packages; Newcastle, 50 packages; Bristol, 52 bundles; Cardiff, 140 bundles; Dundee, 100 bundles and 111 packages; and Glasgow, 1,239 packages and 40 bundles. Shipments to Antwerp were 313 packages; Bremen, 12 packages; Havre, 1 case; Africa, 2 packages; Australasia, 1,221 packages; Brazil, 168 packages; B. Honduras, 58 packages; B. W. Indies, 1,737 packages; Mexico, 561 packages and 49 cases; and New Zealand, 6 packages.

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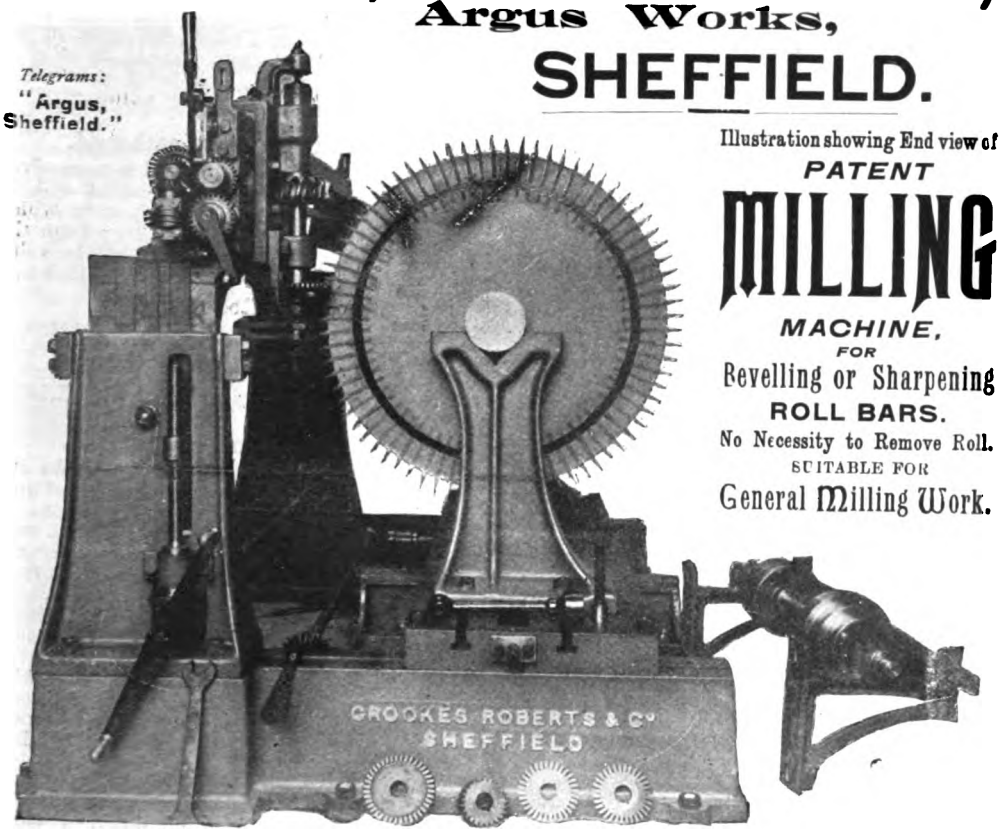

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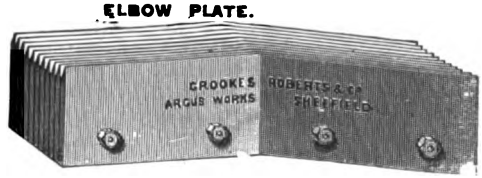

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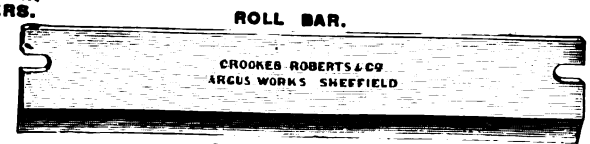

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THE PAPER TRADE IN CANADA.

IMPORTS and EXPORTS.

The total Canadian imports of "paper and manufactures of" during the fiscal year ended 30th June, 1897, amounted in value to 1,095,745 dols. The quantity entered for home consumption reached 1,001,859 dols., the duty being 406,895.17 dols.

Paper for Photographers' Use.

Albumenized papers, etc., were received during the year from the United States to the value of 42,117 dols.; from Great Britain 2,109 dols.; Germany, 695 dols.; Belgium, 182 dols.; and France, 50 dols. The total imports were of the value of 45,123 dols., of which 45,085 dols. represented home consumption, the duty being 13,517·73 dols.

Playing Cards.

There were 250,230 packs of playing cards received, of the value of 18,542 dols. For home consumption, 223,253 packs were entered, of the value of 17,008 dols., the duty being 13,391.73 dols. Great Britain supplied 10,811 packs, of the value of 1,397 dols.; the United States, 239,275 packs, of the value of 17,109 dols.; and Germany, 144 packs, of the value of 36 dols.

Calendered.

Under the heading of "Calendered, including writing and note paper, ruled," the imports reached the value of 1,335 dols., the whole being for home consumption, and subject to a duty of 455.28 dols. The supplies from Great Britain amounted to the value of 300 dols.; and from the United States, to the value of 1,028 dols.

Cardboard and Pasteboard.

Cardboard, etc. (in sheets or cut to size), was received to the value of 14,289 dols. The amount entered for home consumption is represented by 15,088 dols., with a duty of 5,276.55 dols. Supplies were received from Britain to the value of 1,007 dols.; from France, 80 dols.; from Germany, 5,780 dols.; and from the United States, 7,402 dols.

Paper Hangings.

Under the heading of hangings or wall papers in rolls "brown blanks and white blanks printed on plain ungrounded paper" were received from Great Britain to the extent of 36,849 rolls (of eight yards each), of the value of 2,213 dols., and from the United States, 119,456 rolls, of the value of 6,743 dols. "White papers grounded and satins not hand-made" were received from Great Britain to the extent of 11,346 rolls, of the value of 1,252 dols.; from Germany, 472 rolls, of the value of 42 dols.; Japan, 185 rolls, of the value of 270 dols.; and from the United States, 455,524 rolls, of the value of 40,401 dols. "Coloured borders" were received from Great Britain amounting to 718 rolls, of the value of 107 dols., and from the United States, 14,493 rolls, of the value of 2,519 dols. "Bronze borders" were received from Great Britain amounting to 2,594 rolls, of the value of 342 dols., and from the United States 38,200 rolls, of the value of 4,658 dols. All other hangings or wall paper from Great Britain, 13,267 rolls, of the value of 2,238 dols.; from France, 305 rolls, of the value of 329 dols.; from Japan, 30 rolls, of the value of 32 dols.; and from the United States, 141,249 rolls, of the value of 17,089 dols.

Leatherboard and Leatheroid.

Leatherboard and leatheroid were received from Great Britain to the extent of 1,944 pounds, of the value of 87 dols., upon which there was a duty of 17·40 dols.; from the United States, 411,845 pounds, of the value of 13,382 dols., the duty being 2,749·15 dols.

Millboard.

Millboard was received from Great Britain to the value of 1,000 dols., upon which there was a duty of 90 dols.; from the United States, 11,853 dols., the duty being 1,185·30 dols.

Stationery, etc.

"Envelopes, papeteries, blank books and manufactures of paper," were received from Great Britain to the value of 74,222 dols., of which goods to the value of 73,937 dols. were entered for home consumption paying a duty of 25,128·84 dols. The receipts from Germany were of the value of 36,308 dols., of which 35,939 dols. were entered for home consumption, paying a duty of 12,573·65 dols. The quantity received from the United States amounted to 232,931 dols. The value of the goods from the United States entered for home consumption, however, amounted to 233,206 dols., the duty being 81,622·10 dols.

Printings.

Printing paper was imported from Great Britain to the value of 7,861 dols., of which 7,514 dols. represented home consumption, upon which there was a duty of 1,857.83 dols.; from France, 376 dols., the duty being 94 dols.; from Germany, 285 dols., with a duty of 71.25 dols.; from Japan, 10 dols., duty 2.50 dols.; and from the United States, 41,400 dols., the duty being 10,388.82 dols.

Coated Papers, etc.

"Ruled, border, and coated boxed papers" were imported to the value of 11,981 dols., of which goods to the value of 11,726 dols. were entered for home consumption, paying a duty of 4,094.54 dols. Great Britain supplied goods to the value of 2,829 dols.; Germany, 731 dols.; and the United States, 8,421 dols.

Strawboards.

"Strawboards in sheets or rolls, plain or tarred," were received to the amount of 1,080,232 pounds, of the value of 13,191 dols., of which 1,071,552 pounds, of the value of 12,553 dols., were entered for home consumption, subject to a duty of 3,217.97 dols. Great Britain supplied 384,670 pounds, of the value of 5,053 dols.; Germany, 9,090 pounds, of the value of 141 dols.; and the United States, 686,472 pounds, of the value of 7,997 dols.

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Wrappings.

"Wrapping paper and manufactures of" were imported into Canada to the extent of 357,103 pounds, of the value of 13,124 dollars. Of this quantity 352,603 pounds, of the value of 12,977 dollars, were entered for home consumption, the duty being 3,236·65 dollars. Great Britain supplied 23,020 pounds, of the value of 886 dols.; Germany 61,671 pounds, of the value of 5,945 dollars; and the United States 264,853 pounds, of the value of 5,885 dols.

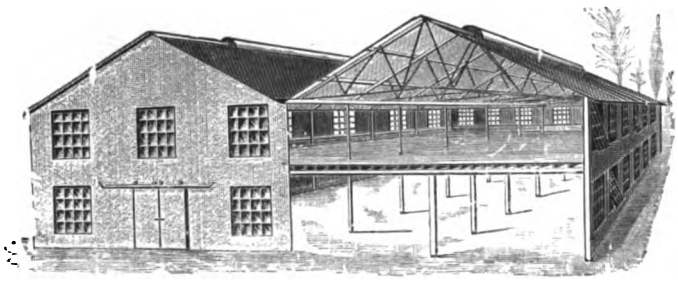
The foregoing particulars show the principal imports into Canada of various kinds of paper from Great Britain and other countries, the statistics indicating that a large proportion of the trade is in the hands of the United States papermakers.

In regard to exports from Canada very little information is given in the official returns. There has been some talk of the Canadians exporting "news," but no statistics are presented to show the extent of the trade, and therefore it may be inferred that the business at present is not very extensive. Prominence is given to the exports of

Wall Paper

only. During the year the Canadians shipped some 36,846 rolls, of the value of 3,726 dols. Ontario contributed 322 rolls, of the value of 52 dollars, and Quebec 36,524 rolls, of the value of 3,674 dols. Great Britain received 5,304 rolls, of the value of 746 dols.; Australia, 5,061 rolls, of the value of 474 dols.; South Africa, 7,899 rolls, of the value of 815 dols.; Newfoundland, 43 rolls, of the value of 28 dols.; and the United States, 18,539 rolls, of the value of 1,663 dols.

IRON ROOFS AND BUILDINGS,



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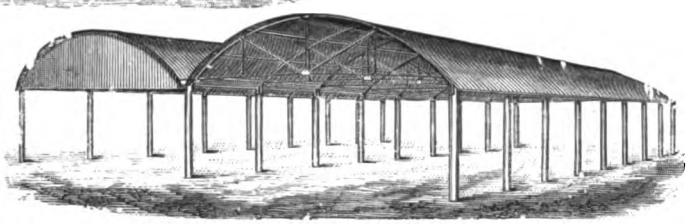

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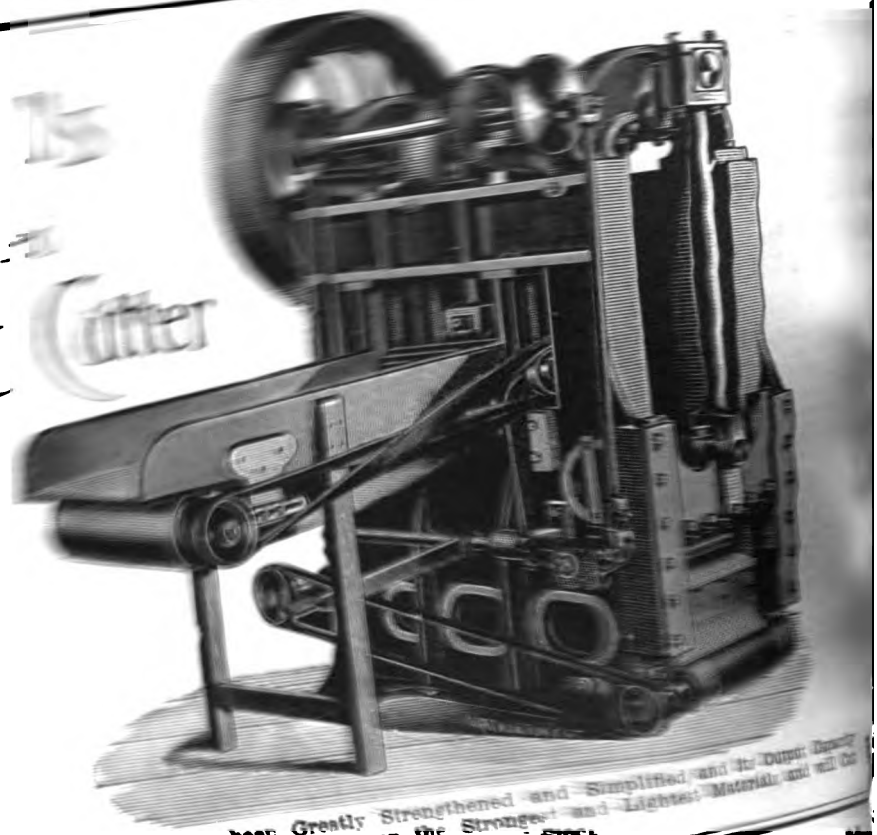

This Machine has now been Greatly Strengthened and Simplified and its Output Greatly increased It is Equally Effective upon the Strongest and Lightest Materials and will do Every Class of Sheet

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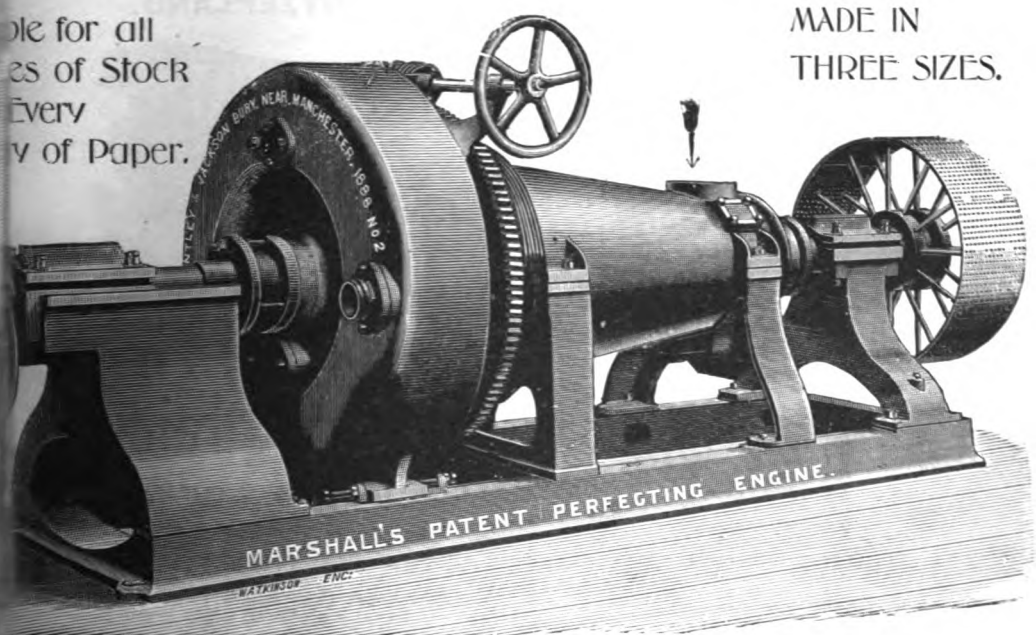

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BURN-TAYLOR Machine.

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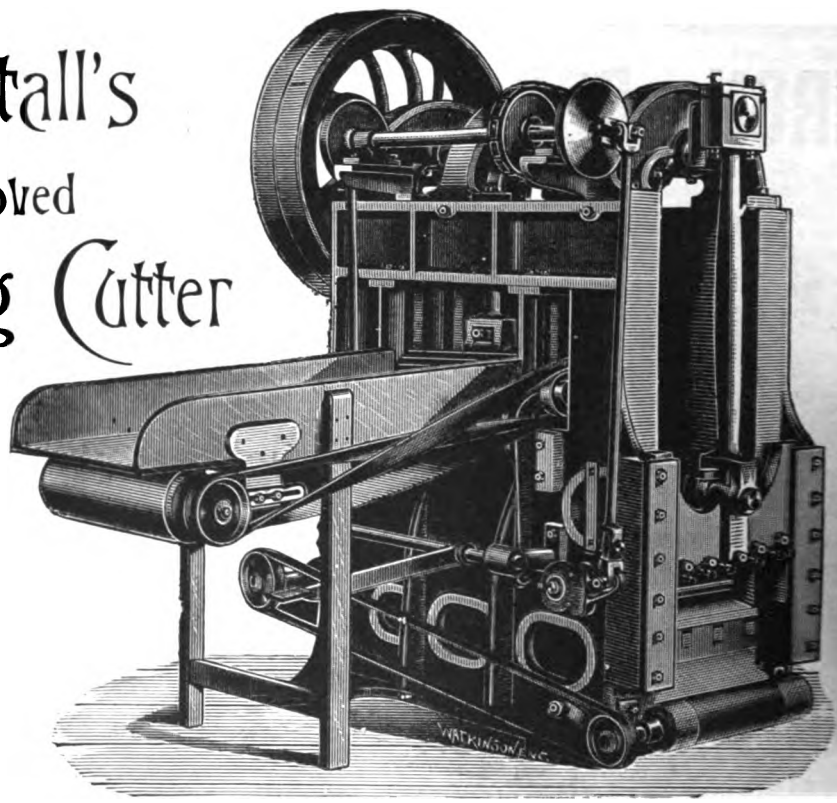

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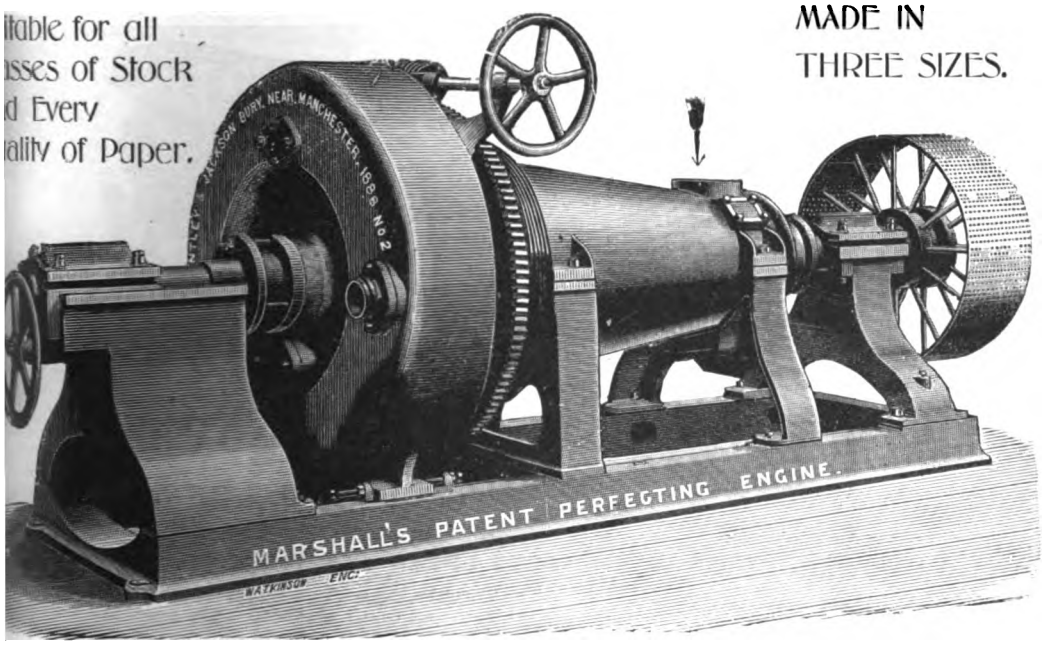
THREE SIZES.



This Engine will produce a Better Finished, Stronger, and More Even Sheet of Paper from the same Materials than can be produced by any other Mechanical Process, and at the same time will REDUCE the TIME and POWER Required for Beating.

OBURN-TAYLOR Machine.

L SHOULD BE WITHOUT.

N APPLICATION.

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AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
42 cases	Antwerp	Kupfer Bros	New York
41 ,,	,,	Vandergrift and Co	,,
4 ,,	,,	Wagner and Co	,,
20 ,,	,,	J. W. Hampton	,,
21 ,,	,,	Sheldon and Co	,,
2 ,,	,,	Borgfeldt & Co	,,
32 ,,	,,	Hartung and Co	Philadelphia
16 ,,	Glasgow	Baldwin Bros & Co	New York
21 ,,	Havre	Druckleib and Co	,,
66 ,,	,,	Sheldon and Co	,,
60 ,,	,,	Druckleib and Co	,,
10 ,,	,,	Spiegelberg	,,
10 ,,	Hamburg	A. Kraut	,,
47 ,,	,,	Amsinck and Co	,,
9 ,,	,,	Knauth, Nachod & Co	,,
10 ,,	,,	,,	,,
2 ,,	,,	Illfelder and Co	,,
8 ,,	Hull	J. Hunter	,,
44 ,,	London	E. Fougera and Co	,,
1 ,,	,,	Cowell and Co	Boston
12 bales	Liverpool	Dennison Mfg. Co	,,
6 ,,	Rotterdam	Dingelstedt and Co	New York
30 cases	,,	De Jonge and Co	,,
57 ,,	,,	Amsinck and Co	,,
15 ,,	,,	Eagle Paper Co	,,

CHEMICAL FIBRE.

30 tons	Antwerp	R. Helwig	New York
15 ,,	,,	H. O. Bateman	,,
10 ,,	Copenhagen	Castle and Gotheil	,,

MANILLAS.

113 bales	Antwerp	Train, Smith and Co	N. York
91 ,,	,,	Salomon and Co	,,
7012 ,,	Calcutta	Train, Smith & Co	,,
3937 ,,	,,	,,	,,
110 ,,	Hamburg	Salomon and Co	,,
90 ,,	,,	,,	,,
65 ,,	Hull	To order	Boston
589 ,,	Kobe	Darmstadt and Scott	N. York
24 ,,	London	Libmann and Co	,,
107 coils	,,	Warner and Co	Boston
333 bales	Liverpool	Butterworth and Co	,,

RAGS.

179 bales	Antwerp	A. Katzenstein	New York
136 ,,	,,	Castle and Gotheil	,,
161 ,,	,,	Hempstead and Co	,,
300 ,,	Bordeaux	Train, Smith and Co	,,
463 ,,	Bremen	,,	,,
251 ,,	,,	Castle and Gottheil	,,
495 ,,	,,	Salomon Bros.	,,
356 ,,	Hull	Butterworth and Co	Boston
420 ,,	,,	H. Dutton and Co	,,
110 ,,	,,	Ring and Co	,,
66 ,,	,,	E. P. True	,,
160 ,,	,,	Train, Smith & Co	,,
199 ,,	,,	,,	New York
46 ,,	,,	Libmann and Co	,,
168 ,,	Hamburg	Joseph and Co	,,
130 ,,	,,	Salomon Bros	,,
1000 ,,	Kobe	Avis and Co	,,
600 ,,	,,	Delacamp and Co	,,
73 ,,	Liverpool	J. Pirnie	,,
34 ,,	,,	J. Libmann and Co	,,
52 ,,	,,	Train, Smith & Co	,,
317 ,,	,,	,,	Boston
246 ,,	,,	Butterworth and Co	,,
39 ,,	,,	E. P. True	,,
33 ,,	,,	Butterworth and Co	,,
218 ,,	London	Atterbury Bros.	New York
112 ,,	,,	Jessup and Moore	,,
80 ,,	Marseilles	Joseph and Bros	,,
275 ,,	Rotterdam	J. Pirnie	,,
52 ,,	,,	Jessup and Moore	,,
152 ,,	Stettin	Lewy Bros	,,
134 ,,	,,	Train, Smith and Co	,,

CAUSTIC SODA.

Quantity	From	Importer	Port
375 drums	Hull	Hill's Son & Co	New York
100 ,,	Liverpool	J. L. & D. S. Riker	,,
50 ,,	,,	Hill's Son & Co	,,

BLEACHING POWDER.

296 cks.	Antwerp	Fuerst Bros	New York
725 drums	Hamburg	Roessler & Hasslacher	,,
47 cks.	Liverpool	J. L. & D. S. Riker	,,
511 ,,	,,	,,	Boston
42 ,,	,,	J. Marble & Co	,,

SODA ASH.

36 cks.	Liverpool	Churchman & Co	New York
320 bgs.	,,	Wing and Evans	Boston
35 cks.	,,	Warren and Co	,,

ALKALI.

25 cks.	Liverpool	Linder and Meyer	Boston

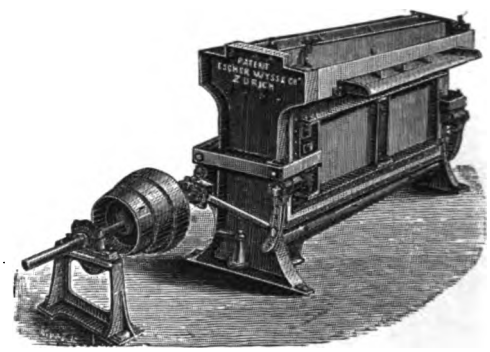
SULPHUR.

1334 bgs.	Liverpool	Linder & Meyer	Boston

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

OVER 100 AT WORK.

FACTS SPEAK FOR THEMSELVES—

The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES—

SUPERIOR to any other System for its Numerous Advantages as:

Large Production with any kind of Pulp.
No Stoppage for Cleaning.
Most Regular and Quite Noiseless Working
Little room taken up on the Machine, &c.

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A. WERTHEIM & Co.,

HAMBURG,

SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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THE ECONOMICAL USE OF STEAM

IN THE MANUFACTURE OF PAPER.

BY CHARLES E. EMERY, PH. D.

(Continued.)

On account of the high price of dock property in New York, the coal had to be brought to the building in carts. It was dumped into cars which were backed through the cellar under the front area of the rear building, and such cars were run to an elevator in the boiler house and lifted to the top, where they were run out over the coal storage and the coal dumped. Similar cars in the cellar received the ashes, and were run on the elevator, carried to the top of the rear building, and delivered the ashes through a chute to a cart backed into a niche in that building. This is still the largest boiler plant in the world. To be sure, the large steamers of the Lucania class contain over 30,000 horse-power, but this is on a compound engine basis of 15 pounds per horse-power per hour, whereas the boilers of the Steam Company are rated on a 30-pound basis, and run regularly at 20 per cent. above capacity. The multiple story plan has been followed in constructing some large electric stations in several cities, but it will not be necessary in ordinary steam plants. The speaker has not yet found any of the recently constructed large stations which operate with more economy than that of the Steam Company. As the coal flowed to and the ashes ran away from the firemen there was no difficulty in operating 600 horse-power of boilers (1,200 horse-power on a compound engine rating), with one man, and though the modern coal conveyors have undoubted advantages compared with the system adopted in the Steam Company's plant, the work was on such an enormous scale there that no saving is known to have been made in operation.

Automatic stokers of various kinds have been applied for a number of years. The capacity obtained per man with those of the original type proved inferior to that obtained by the Steam Company's system, so the speaker has not been impressed with the value of such devices. He is now assured, however, that they are perfected to such an extent in connection with modern means of hoisting the coal and removing the ashes that very little labour is required. A careful investigation of the more modern of these plants would be necessary to ascertain if such is the fact. There is, however, a better chance for economy in this direction in a paper mill, where the demands for steam are nearly uniform, than in an electric light station, where the demands are so extremely variable throughout the day, and a load liable to be brought on suddenly in case of a storm.

* A Paper read before the American Paper and Pulp Association.

In order to secure maximum economy it is desirable that economisers be used in connection with all types of boilers. Theoretically the economy in well designed boilers depends upon the area of the heating surfaces, but not in direct proportion. With a coal consumption of 15 pounds per square foot of grate, careful experiments showed that 4·68 pounds of water were evaporated from and at 212° per pound of coal, with the heating surface only three times the grate area, or about the same as is exposed in the furnace of a marine boiler. With heating surface six times the grate 2·6 pounds additional were evaporated, or 7·28 pounds in all, and the results due to increased surface were as shown in the following table :—

Heating Surface to Grate.	Evaporation from and at 212°.	
	Addition by Increased Surface. Pounds.	Total. Pounds.
3	4·68	4·68
6	2·60	7·28
9	1·54	8·79
12	·97	9·76
15	·63	10·39
18	·51	10·90
21	·40	11·30
24	·31	11·61
27	·24	11·85
30	·18	12·03

In regular practice the evaporations are ordinarily only about eight-tenths of those given above. Evidently the surface would need to be very greatly increased to obtain any material increase of evaporation. It is not ordinarily customary to construct a boiler with more than 25 to 30 square feet of heating surface per square foot of grate, or, what is more important, to operate a boiler so that more than 0·5 to 0·6 pound of coal is burned per square foot of heating surface. The additional surface necessary to reduce the rate of combustion per square foot of heating surface is usually erected as a separate structure called an economiser. Its office is that of a feed water heater, and as the temperature of the feed water is lower than that of the water in the boiler, the surface is more efficient than boiler surface. Frequently economisers bring the temperature of the products of combustion so low that the moisture in the escaping products of combustion is condensed and causes corrosion of the tubes. It is desirable, therefore, to make them of cast iron, which corrodes less easily. The automatic system of continuous cleaning is also desirable. At the Tide Water Oil Company one of the superintendents set up a number of old horizontal tubular boilers to form an economiser, and while the speaker expressed a fear that the tubes would soon become corroded and require renewal, such has not been the case at the latest advices, for the reason that the boilers are used continuously day and night, and as this is the condition in a paper mill it appears that a somewhat

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cheaper construction of economisers may be adopted when all the conditions are studied.

Great care should be taken in connecting the several boilers so that the current of steam from one will not retard the flow from others. Care should also be taken to avoid pockets in which water of condensation may lodge when boilers are shut down, and cause danger from water rams when steam is turned on.

Everything about the steam machinery of a paper mill should be of a reliable character, without great complication, as many intricate details would be liable to derangement, and cause a stoppage of the plant, much more damaging than minor savings in fuel for a considerable period. The engine driving the machine should particularly be of comparatively simple type, with all parts readily accessible, and with details that can be readily replaced. It is a question whether in some important mills it would not be better to duplicate the engine and driving attachments.

The keynote of saving by the use of exhaust steam is never to allow any steam to escape. Therefore care should be exercised in selecting an engine of the proper size. It should furnish the power to operate the paper machine with a reasonable degree of expansion, and without delivering more exhaust steam than is required for the dryers and other regular heating purposes. The pressure to be employed should be well considered in relation to the power required for the machine. The higher the steam pressure the more economical the engine, but the greater the losses by condensation in the various connecting pipes. The pressure must be sufficient so that all the power required will be obtained from steam used afterwards for heating purposes, when, if there be deficiency of exhaust steam, the low pressure supply may be augmented with live steam direct from the boilers, and in certain cases from boilers operated at a lower pressure, and there will be no material loss, as the whole quantity of steam will be used for heating purposes and the power be obtained for a nominal cost, as it only requires about one-eighth of the heating power of the steam which passes through the engine, as previously explained.

The water of condensation from the dryers should be returned to the boilers at as nearly the full pressure supplied thereto as possible, so as to keep up the temperature of the feed water. Each 10° increased temperature of feed water corresponds to a saving of 1 per cent. of the fuel. Hot water can be pumped successfully if it be kept under pressure. It may be necessary to lower the pumps, so that there will be a slight head upon them, but this can be generally accomplished without difficulty.

Steam pumps exhausting continuously into the atmosphere should not be tolerated for any purposes. If used at all they should exhaust into the low-pressure pipe leading to the dryers. So much steam is required to operate such pumps that it will be very easy to obtain more exhaust steam than is required for heating purposes, and its escape will, as stated, cause a direct loss. It is, therefore, better generally to depend upon power pumps operated at will either by the steam engine or by water power, though it is well to have steam pumps in reserve as auxiliary feeders and for fire purposes.

The speaker is informed that in some locations difficulty has been experienced in properly draining the drying cylinders. The water of condensation necessarily tends to collect at the bottom of each cylinder and continuously flows back towards it as the cylinder revolves. Such water needs to be lifted to or above the height of the trunnion before it will flow out. The simplest of drainage is with a stationary syphon. One branch is extended to the bottom of the cylinder; the other should be carried down outside to a lower depth and connected through a hot water return system with a closed hot well from which the water is to be withdrawn by the pumps. Unless the steam supply pipes are very large the difference of condensation in different dryers will produce a slight difference of pressure in the same, so that the syphons from some of the dryers will act while those from the others will not, at least until quite an accumulation of water takes place. A great part of the difficulty may be obviated by setting a separate trap for each dryer. The so-called steam traps which operate by difference in temperature instead of the weight of the water are not steam traps at all. They are really heat traps; that is, they hold back the heat and operate as soon as the water reaching the trap cools. Some of these which will operate with a very slight change of temperature may answer as steam traps so far as drainage is concerned, but it is not desirable that the water should be allowed to cool. The correct form of steam trap is one in which the valve is opened by the weight of the water as soon as sufficient water accumulates to fill the bucket or lift the float operating the valve. Many of these devices have been so cheapened as to be at times worthless. Even with a separate trap for each dryer the traps will stop working if there be any air in the system, unless there be a pass-by opened all the time slightly so as to keep a current of air, steam, or water moving through the syphon. A pass-by, however, can easily cause a very considerable loss of steam. The rule should be made never to permit the outlet of one to be concealed, for if it be, and the pass-by be left open by misjudgment or carelessness steam may escape continuously, and if it goes to the atmosphere, it will be entirely lost, and if to the hot well may interfere with the action of the pumps. Pass-bys should be very small and open into the room. Then, as soon as the air is blown out in starting, steam will follow, and it will be necessary to shut them.

Messrs. Johnsen & Jorgensen, wood pulp agents, of 4, 5, and 6. Bury Court, St. Mary Axe, London, E.C., have been appointed representatives in this country for the Pusey & Jones Co., makers of fast running American papermaking machines.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

THE TURNER PAPER MILLS CO., LTD.—In our last issue we mentioned that Mr. Jos. Turner was about to terminate his engagement with the Star Paper Mill Co., and had accepted an engagement as managing director of a new company—to be known (instead of the Rawcliffe Paper Co.) as the Turner Paper Mills Co., Ltd.—which had acquired the plant and premises of the Hull Paper and Wood Pulp Co., at Rawcliffe, near Goole. Matters relating to the registration are in the hands of Mr. Clayton, solicitor, of Clegg-street, Oldham, and associated with Mr. Turner are the following well-known gentlemen:—Mr. J. H. Lees, brewer, of Oldham; Mr. Grover, of Messrs. Grover and Whitnall, brewers, Salford; Mr. E. Holt, brewer, Manchester; and Mr. Newsham, hop merchant, Manchester.

BORDER COUNCILS AND RIVER POLLUTION.—In the House of Commons, on Monday, in reply to Sir J. T. Brunner, the Lord Advocate said the Government could not themselves undertake to introduce a bill to empower the Scottish County Councils immediately north of the border to act with the English County Councils immediately south for the formation of joint committees for the prevention of the pollution of rivers, but the Secretary for Scotland would be disposed to favourably regard the introduction of the measure if satisfactorily drafted.

MESSRS. WINSER AND CO., of Manchester, manufacturers of papermakers' chemicals and minerals, advise us that their premises in Harter-street are about to be taken down and that they will remove their warehouse and stores to Castle-street, off Deansgate. We are informed that the facilities for loading quickly will be quite as great, if not greater, than at Harter-street, and that the firm will hold their usual stocks at the new place. On and after April 16th, communications should be addressed to 312, Deansgate, Manchester.

PAPER MILLS AND ELECTRICITY.—The immense electric equipment for the S. D. Warren mill on the Presumpscot River, near Portland, Me., U.S.A., has just been placed in position. Previous to the inauguration of electric power in the plant the machinery was driven by hydraulic power furnished by a concern depending on a ten-foot fall in the river for supply. Now that the generators and motors are in position power will be created from an intricate arrangement of machines and tools, as follows: Seven two-phase induction motors; four motors, each 50 horse-power, and one 75 horse-power motor will drive the big generators. There are two generators, each two-phase, 300 horse-power, and are operated in multiple, supplying a current of 1,100 volts to four 200 horse-power transformers that deliver the current 8,000 strong over a three-phase line of bare copper wire. By this means every machine in the plant is put in motion. All motors are belted direct to the machines or to short-line shafting. The apparatus and its arrangement is said to be one of the most elaborate in use. It drives all machinery in the pulp mill, sorting house, and operates the calenders and pumps as well as furnishing light for the entire establishment.

PRESENTATION TO A PAPERMAKER.—In our last issue we mentioned that Mr. James Salmon was leaving the Northfleet Mills, of the Ekman Paper and Pulp Co., to take over the management of the papermaking department of the High Wycombe Mills, of Messrs. A. E. Reed and Co. As evidence of the high esteem in which Mr. Salmon was held amongst the workpeople at Northfleet Mills, they presented him with a handsome combination cabinet and writing desk, bearing the following inscription:—"Presented to Mr. James Salmon with best wishes from the employees of the Ekman Paper Co., Ltd. March 26th, 1898." Mrs. Salmon was presented with an elegant Russian leather handkerchief bag. Mr. Salmon expressed his thanks, and referred to the friendly relations that had always existed amongst them at the mill.

FIRE AT HEBDEN BRIDGE.—Shortly before three o'clock on Sunday morning a fire broke out in the warehouse belonging to Mr. Nathan Varley, paper and rag merchant, Hanging Road, Hebden Bridge, and damage to the amount of £1,000 to £1,200 was done. When the fire brigade arrived on the scene the fire had obtained such mastery that there was no chance of saving either the stock or buildings, and they devoted their attention to protecting the adjoining works and cottage property. Neither the building nor the stock was insured.

ACETYLENE GAS APPARATUS.—The council of the Imperial Institute have authorised the holding of an exhibition of acetylene gas apparatus in the grounds of the institute at an early date, and, in order to ensure that no apparatus should be admitted to the exhibition unless it was shown to fulfil the requisite conditions of safety, the council of the Society of Arts have appointed a committee to decide upon those conditions, and to lay down rules for the admission of apparatus. The following gentlemen have been appointed to act on this committee:—Major-General Sir Owen Tudor Burne (chairman of the council), Sir Frederick Bramwell, Professor James Dewar, Mr. Harry Jones, M. Inst. C.E., Professor Vivian B. Lewes, Professor Boverton Redwood, Professor W. C. Roberts-Austen, Professor J. M. Thomson, and Sir Henry Trueman Wood (secretary). Full particulars will shortly be issued as to the regulation and rules laid down.

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THE TORRENT FILTER.—In our last issue we published a description of the Torrent Filter manufactured by the well-known engineers, the Pulsometer Engineering Co., Ltd., of Nine Elms Iron Works, London, S.W., and also gave an illustration of an installation which had recently been made at a Scottish paper mill. The mill in question, we may state, is that owned by Mr. D. M. Watson, of Bullionfield, Dundee, whose makes of fine printings and E. S. writings have an established reputation on the market. The "Torrent" filter undoubtedly possesses many features of recommendation over most of the appliances which are designed for filtration purposes. Very little attention, for instance, is required in cleaning the Torrent filter. A few minutes attention every twelve hours being found, in most cases, all that is necessary. In our article last week, owing to a printer's error, we stated that the five filters at Mr. Watson's mill had an output of 24,000 gallons of filtered water per 24 hours. The filters, as a matter of fact, have an output of 24,000 gallons per hour.

PAPER TRADE BALL.—In connection with the paper trade, a private subscription ball is announced to be held at the Hotel Cecil, on Friday, the 29th inst. Serving on the committee are Messrs. Geo. Busbridge, East Malling Mills, Kent; John Eberstein, 28, Budge-row, E.C.; F. Becker, 64, Cannon-street, E.C.; and S. Chas. Phillips, 47, Cannon-street, E.C.; the hon. secretary and treasurer being Mr. W. D. Cork, of 77A, Queen Victoria-street, London, E.C. It is stated that any profits accruing from the ball will be devoted to a charity to be decided upon by the committee.

PAPER FELT.

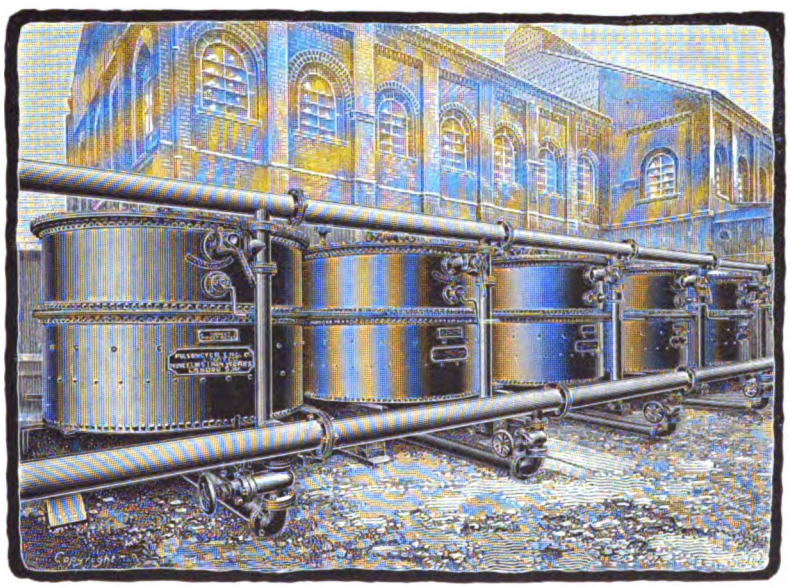
Mr. Alexander Davidson has taken out a patent relating to the manufacture of felt containing cedar or other aromatic wood in order to give it a pleasant perfume and prevent its destruction by moths and other insects.

Hitherto wood fibre has been mixed with the ordinary pulp mostly made from woollen and other rags from which the felt is made, but when this is done, only a small proportion of wood can be employed as otherwise the felt is unduly weakened, and besides a bad surface is given, owing to the presence there of particles of wood.

According to Mr. Davidson's process the wood fibre is enclosed between two sheets of paper material which enables an increased quantity of wood to be employed whilst the finished article has as good a surface as if no wood were present.

The method of manufacture adopted is somewhat similar to the well-known method of making paper from two or more different sorts of pulp. A layer of pulp is run on to the travelling wire cloth, a layer of wood fibre is dusted on to the pulp as it moves along and then a second layer of pulp is run on to the top of the wood the whole passing together to the couch roll, the manufacture being completed in the ordinary way. Or in place of dusting on the wood fibre it may be run on in the form of pulp.

In place of the above described method the wood fibre may be introduced between two partly formed webs of paper.



RECENT INSTALLATION OF "TORRENT" FILTERS AT BULLIONFIELD PAPER MILL, DUNDEE.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

REPORTS from Scandinavia state that the wood pulp market is more active; business, however, is not on a very extensive scale. Sales of moist pulp are reported at Kr. 29 to Kr. 31 f.o.b.

ARRIVALS at Manchester, London, Liverpool, and Glasgow of wood pulp from the United States have been fairly large this week.

AMERICAN manufacturers of sulphite state that there is a good home demand and that better prices are obtainable than can be secured in exporting to Europe. Consequently more attention is being given to local requirements. Prices are reported firm, with an upward tendency.

CANADIAN EXPORTS of wood pulp for the fiscal year, ended 30th June, 1897, amounted to 741,959 dols. The shipments from Ontario amounted to 132,565 dols.; Quebec, 270,131 dols.; Nova Scotia, 193,853 dols.; and New Brunswick, 145,405 dols.

GREAT BRITAIN imported from Canada during the fiscal year wood pulp to the value of 164,138 dols.; Germany received Canadian wood pulp to the value of 1,000 dols.; France, 80 dols.; United States, 576,720 dols.; and Newfoundland, 21 dollars.

CANADA imported wood pulp during the last fiscal year to the value of 9,006 dollars. The quantity entered for home consumption was of the value of 8,698 dols., upon which there was a duty of 2,174.50 dols. The imports from the United States amounted to 8,326 dols.; from Germany 590 dols.; and from Great Britain 90 dols. The receiving centres were: Ontario, 5,734 dols.; Quebec, 2,027 dols.; Manitoba, 212 dols.; and B. Columbia, 1,033 dols.

ALTHOUGH the total value of the exports of Canadian wood pulp for the fiscal year amount only to about £148,392, of which £32,827 represents the British demand, there is every reason to believe that during the latter half of last year the exports were on a considerably increased scale.

BY way of comparison we may mention that during 1897 Norway exported wood pulp to Great Britain alone to the value of £983,478.

THE latest statistics dealing with the British imports of wood pulp from Sweden relate to the year 1896, when the value was £591,497.

CONSIDERABLE interest is being shown by local capitalists in St. John, Canada, in the pulp mill enterprise initiated by Mr. George S. Cushing. The lumber men in the district have expressed their readiness to subscribe a large proportion of the necessary capital, and it is expected that the mill will be equipped and running by next fall. The concern will be known as the Cushing Sulphite Fibre Co,, and application has recently been made for incorporation.

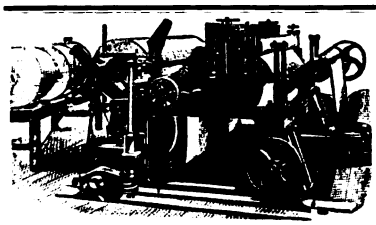
THE amount of the capital stock of the Cushing Sulphite Fibre Co. is to be five hundred thousand dols., divided into ten thousand shares of fifty dols. each, of which shares amounting to twenty-five thousand dols. have been actually subscribed. The following are the names, addresses and callings of the several applicants, of whom the first five named are to be the first or provisional directors of the said company: Messrs. Joseph Allison, St. John, merchant; William H. Murray, St. John, lumberman; Thos. McAvity, St. John, merchant; George F. Baird, St. John, shipowner; George S. Cushing, St. John, millowner; Geo. McKean, St. John, lumberman; James Fleming, St. John, foundryman.

CANADIAN manufacturers regard the French market as an excellent one for their product, and are giving warm support to the establishment of a steam ship line between France and Canada.

IT is stated that the French Government is ready to grant an annual subvention of 80,000 dols. providing that an equal subsidy is given by the Canadian Government. It is questionable whether the Canadian Government will be ready with such a large annual endowment.

IMPORTANT TO WOOD PULP AND OTHER ADVERTISERS.

"'THE WORLD'S PAPER TRADE REVIEW' . . . . widely circulated . . . . both in this country and abroad."—MUNNS AND LONGDEN, solicitors to the BRITISH WOOD PULP ASSOCIATION.



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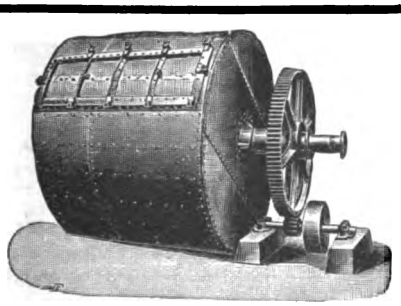
Apparater äro Levererade till Följande:

Fram Nya Aktiebolag ...	4
Lottefors Trämassefabrik...	1
Josefors Aktiebolag ...	2
Brättne Trämassefabrik ...	1
Aktiebolaget Walkiakoski	1
Böhnsdalens Trämassefabrik	6
Embretsfos Sulfitfabrik ..	4
Hunsfos Fabriker	2
Tornator Trämassefabrik...	2
Hafslund Trämassefabrik..	1
Treschow-Fritzöes Fabrik	1
Sörfors Trämassefabrik ...	1
Lövenskiold Fossum ...	2
Drammenselvens Fabriker	1
Union Co.	2
Ranheim Fabrik	1



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Great Britain and Ireland:
Messrs. Christophersen, Andrews & Co., 91, Queen Victoria Street, London, E.C.

United States:
Messrs. Frederick Bertuch & Co., Temple Court Building, Room 308-10, New York.

Belgique & France:
Messrs. Lammleth & Cornet, Anvers.

Deutschland und Oesterreich:
H. Füllner, Warmbrunn, Schlesien.

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GERMANY.

THE ASSOCIATION OF GERMAN BROWN PAPER MAKERS met lately at Leipzig, and reported that the arrangements about price of the article worked most satisfactorily. It has been decided to arrange for a central sale office. This will probably enable a slight reduction in price, in consequence of decreased expenses. Three large outsiders have lately joined the association. It is being recognised that it is equally advantageous for buyers, dealers, and manufacturers to have steady and regular prices.

IRREGULAR NORMAL PAPERS.—This question still occupies the attention of German papermakers. It is urged that the watermark of rejected parcels should be run through, or the paper should otherwise be so marked that the rejection cannot be overlooked. If sales are then made of such paper at a lower price, they cannot be said to infringe the correct normal watermark. Sellers of incorrectly-delivered normal paper with the original mark should be heavily fined, for as long as the regulations exist they must be enforced, in justice to those who adhere to them loyally.

GERMAN PAPER PRICES have steadily been going down and in spite of frantic efforts now and then papermakers have not been able to make a stand, even now that raw materials are stiffening. Among many other reasons for this falling market one, according to the *Holzstoffzeitung*, is very often overlooked, viz., faulty parcels, which cannot be entirely avoided even in the best regulated mills, are sold as jobs. This is quite a mistake, for in the first place, the parcels scarcely ever fetch more than the price of the raw material, and then further more, the selling at low prices gives certain dealers the opportunity of cutting down the price. It is contended that faulty parcels ought not to be sold at all, but simply go into the stuff engine to be worked up again.

UNITED STATES.

DEVELOPING AN EXPORT TRADE. — A sample warehouse for American goods has been opened in Caracas, Venezuela, under the direction of the National Association of the Manufacturers of the United States of America. Under the concession which the National Association of Manufacturers enjoys, all the goods intended for exhibition in the warehouse are admitted free of duty, and remain in bond unless sold. The bonding privilege, so largely used by importers in the United States, is a system unknown in Venezuela, and the warehouse of the National Association of Manufacturers, which is virtually a bonded sample room, is the first of its kind in that country. It will be under the constant supervision of a representative of the Venezuelan Government, who will be responsible for the contents of the building. It is evident that the Americans are bent on developing an export trade, and European countries must feel the attack wherever sample warehouses are introduced.

AT the annual meeting of the Boston Paper Trade Association, recently held, the president, the Hon. Wellington Smith, referred to the improved condition of the paper trade. He stated that they never had so many orders before, and so little paper on hand.

THE J. H. HORNE AND SONS COMPANY, Lawrence, Mass., have shipped to the Laurentide Pulp Company, Canada, ten 1,400-pound Horne engines, three Jordan engines, one 108-inch cutter and one 114-inch double cutter.

WOOD FLOUR AND THE TARIFF.—The appraisers have handed down a decision in the protest of S. Goldman against the collector of New York on a certain wood ground into a dry powder, and generally known as wood flour, both in Europe and America. The claim that the merchandise is dutiable as wood pulp, under paragraph 393, Act of 1897, was overruled, and the assessment of 35 per cent., under paragraph 208, was affirmed.

CANADA.

A NEW PAPER MILL is to be started in Ottawa. Messrs. F. Bonney and J. R. Kennatt, formerly with the Eddy Co., are at the head of the enterprise. One machine will be installed at first, which will run on tissues.

THE PAPER BAG COMBINATION OF CANADA, —which includes among others the E. B. Eddy Company, of Hull; Kilbour Brothers, of Toronto; and J. C. Wilson & Co., Montreal—is considering an advance in its prices. It is said that it has decided on discounts on a sliding scale.

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last :—

STRAWBOARDS.

2278 b	Copenhagen	London	1255 b	Rotterdam	Manchstr
1929 ,,	Rotterdam	,,	959 ,,	Stettin	,,
320 ,,	Ghent	,,	48 ,,	Copenhagen	,,
3549 ,,	Amsterdam	,,	2334 ,,	Rotterdam	Liverpool

WOOD PULP BOARDS.

504 b	Hambro	London	100 b	New York	Manchstr
80 ,,	,,	,,	20 r	Hambro	,,
72 ,,	Hango	Hull	50 c	Boston	Bristol

MILLBOARDS.

11276 b	Harlingen	Hull	5084 b	Dieppe	Goole

PASTEBOARDS.

8650 b	Harlingen	Leith	66 b	Fiume	Glasgow
207 ,,	New York	Liverpool	647 ,,	Triest	London

b—bales. c—cases. r—rolls. cr—crates.

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Life of Wires.

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—I notice in the *World's Paper Trade Review*, of March 25th, a reference to a wire making about 590 tons of paper, and it may interest you to know that I am on a machine at the present time in a mill in Scotland where one wire has made over 1,200 tons of finished paper—news, 14-lbs. demy.

I believe this must be a record performance; if not, I shall be glad to learn where any other wire has turned out a greater quantity. I may mention that the wire was made by Messrs. James Brodie and Co., of Glasgow.

Yours truly,
MACHINEMAN.

PEMBROKESHIRE.

FOR SALE, BY PRIVATE TREATY,

THE LEASEHOLD PROPERTY,
known as

The Prendergast Paper Mills,

together with a
DWELLING HOUSE,

Garden and Out-premises, Orchard and Hayguard, also a Field adjoining containing 4 a. 1 r. 30. p., all held under a Lease for 21 years dated 20th August, 1894, at a Rent of £60 per annum free of tithe. The said Lease contains a clause enabling the Lessee to purchase the Freehold for the sum of £1,000.

The Mills contain all the requisite Machinery for Paper-making, and there is a plentiful supply of water from the River Cleddaw.

For further particulars and to treat apply to Messrs. T. Rule, Owen and Son, Estate Agents and Valuers, Haverfordwest; or to Messrs. Eaton, Evans and Williams, Solicitors, Haverfordwest. 1316

PAPER MILL VALUATIONS, &c.

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IN ANY PART OF THE UNITED KINGDOM.

DETAILED DESCRIPTIVE INVENTORIES prepared by competent assistants (without stoppage of works) and VALUATIONS made for the formation of Concerns into Limited Liability Companies, Partnerships, Transfer, Insurance and other purposes.

SALES BY AUCTION or PRIVATE TREATY of Concerns in Liquidation or otherwise.

The SETTLEMENT OF FIRE LOSSES undertaken on behalf of the assured only.

For Terms, &c., Apply

EDWARD RUSHTON, SON & KENYON,
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MACHINERY FOR SALE.

Paper Works

(LEEDS)

DISMANTLING.

DRUM WASHER, 34-in. diameter by 30-in. face.

VERTICAL HIGH-PRESSURE STEAM ENGINE Cylinder 10-in. diameter, 24-in. Stroke and Fly-wheel 7-6-in. diameter 6-in. Face, 7-in. Rcm., Good, Strong and in Good Order.

FIRST-CLASS MILD STEEL REVOLVING SPHERICAL BOILER, 8-ft. 6-in. diameter, Double-rivetted and fitted with All Improvements, with Stands, Gearing, Pedestals, Pulleys, &c., all as good as new, Steam Guage up to 100-lbs., &c.

TWO OF HIBBERT'S PATENT 12-Cwt. BEATING AND REFINING ENGINES with all Improvements.

HORIZONTAL COMPOUND CONDENSING TANDEM STEAM ENGINE.—A really Good Engine and and in First-Class Condition, by J. Musnrave and Sons, Bolton. 400 I. H. P., with all connections.

FIRST-CLASS THREE-BOWL FRICTION GLAZING CALENDER, 49-in. wide, Middle Bowl Paper with all connections complete and in First-Clast Order.

ONE NEARLY NEW STEEL BOILER, Double-Flued, worked at 100 lbs. As good as can be made in all respects, with Mountings, &c., as now fixed. 8-ft. diameter 30-ft. long. Double-Rivetted, by Horsfield's, Dewsbury.

ONE SECOND-HAND BOILER, Worked at 60-lbs., as now fixed, 7-ft. diameter, 30-ft. long.

CIRCULAR WROUGHT REVOLVING SIZE BOILER, 6-it. long 4-ft. diameter, with stands, gearing, pedestals, &c, as now fixed.

All the above are FOR SALE

at

UNION PAPER MILLS

Dewsbury Road, LEEDS.

For Further Particulars or Prices apply to the above or 3127

J. J. MOSLEY, WORMALD ROW, LEEDS.

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[illegible] Paper

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

	Printings. Cwts.	Writings. Cwts.	Various Cwts.
[illegible]STRALASIA	4280	[illegible]	[illegible]
[illegible]RGENTINE	—	535	[illegible]
[illegible]	[illegible]	103	[illegible]
[illegible]	77	[illegible]	[illegible]
[illegible]	75	—	—
[illegible]	—	[illegible]	—
[illegible]	465	36	[illegible]
[illegible]	—	[illegible]	—
[illegible]	63	43	[illegible]
[illegible]	—	—	[illegible]
[illegible]	—	—	[illegible]
[illegible]	—	[illegible]	—
[illegible]	15	[illegible]	[illegible]
[illegible]	—	[illegible]	[illegible]
[illegible]	—	[illegible]	[illegible]
[illegible]	—	[illegible]	[illegible]
[illegible]	17	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	—	—	[illegible]
[illegible]	13[illegible]	[illegible]	[illegible]
[illegible]	—	[illegible]	[illegible]
[illegible]	[illegible]	—	[illegible]
[illegible]	[illegible]	—	—
[illegible]	—	—	[illegible]
[illegible]	—	[illegible]	[illegible]

FROM GLASGOW.

	Printings. Cwts.	Writings. Cwts.	[illegible]
[illegible]	[illegible]	—	—
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	—	—
[illegible]	—	—	[illegible]
[illegible]	—	[illegible]	—
[illegible]		—	[illegible]
[illegible]	[illegible]	—	—
[illegible]	—	[illegible]	—
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	—	—	[illegible]
[illegible]		—	[illegible]

[illegible] ORGENSEN,

[illegible] MARY AXE.

LONDON. E.C

[illegible] & Mechanical

[illegible] PULPS.

AGENTS ONLY.

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SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per ANNUM, Post Free to all Countries

OFFICES—58, SHOE LANE, LONDON E.C.

Situations Vacant.

WANTED, smart CUTTERMAN, able to take place on machine in case of sickness.—Apply, Rytarnmake Paper Mills Co., Ripponden, near Halifax. 724

WANTED, MANAGER for a two-machine mill making Engine-sized Writing and Printings from Esparto. A thoroughly capable man will meet with every encouragement.—Apply by letter in the first instance to No. 723, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 723

Situations Wanted.

A YOUNG GENTLEMAN, Pole, 20, able to converse and correspond fluently in German, French and Spanish, well up in the English language, desires situation as Foreign Correspondent or Clerk; salary expected small.—Laskowski, Paper Lithographic 724

CLERK (Wells Street) or SHIPPER in paper mill, or town house; practical experience in London and at mills. Shorthand.—Address, No. 722, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 722

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, Ledger Writing, Tinted and Lithographic Papers, etc. Practical knowledge of engineering, chemistry and commercial experience all necessary; accustomed to analytical and scientific work; good organiser, with ability to take charge of large staff.—Address, No. 722, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 722

PAPER and Paper Bag Making.—Gentleman with practical experience in large Paper Bag Shops and Stationery Warehouses, and in Paper Bag Machinery, with a good connection in the trade, requires engagement as Secretary, Cashier or Traveller. Highest references as to character and references.—Address, No. 722, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 722

PAPERMAKER is open to Take charge of Engagement as Worker, Foreman, Manager, Overlooker and Manager. Has had experience in all kinds of Papers.—Address, No. 722, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 722

WANTED.—Situation as Manager or Foreman; used to printings, news, etc.; 6 years in last mill; good references.—Address, No. 7,248, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 7248

Machinery.

WANTED, Revolving Boiler. State price, with full particulars, to No. 7,242, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 7242

Miscellaneous.

IT IS WORTH YOUR WHILE TO BUY DIRECT.—The RELIANCE LUBRICATING OIL COMPANY supply on approval "Reliance" high-class NON-CORRODIVE LUBRICANTS, which, through their superiority, have the largest sale in the world. Engine, Cylinder and Machinery Oils, 1½d.; Spindle Oil, 2½d.; Loom Oil, 1s 9d; Extra Special Cylinder Oil, 1s. 4d; Extra Special Engine Oil, 1s 4d. One Engine and Dynamo Oil, 1s. 6d. per gallon; Light Machine Oil, 1od. Barrels free and carriage paid. Black Oil, 8d. per gallon. Also Solid and Liquid Oils for all other purposes. RELIANCE LUBRICATING OIL COMPANY, 19 and 20, Water lane, Tower street London, E.C. Depots at Liverpool, Bristol, Hull, Cardiff and Glasgow. Telegrams, "Solustra, London." A B C code used. Telephone No. "Avenue," 6,891. 3008

JOHN FULTON & CO., Engravers of Rollers for Print of Wall Papers etc., and also Rollers for Embossing all kinds of Papers. Knowsley street Engraving Works, Manchester. 726

REDUCED PRICE 2/6 EACH.

50 Years' Experience in Papermaking

A few copies of this book are obtainable at a reduced price on application to the Author

JAS. ROBERTSON, Linthorpe Lane, Green Co. Durham or to the Printers.

ANDREW REID & Co. Ltd. Newcastle-on-Tyne

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Prepared after Mischerlich's Method.

A Size quarterly Annual of most advantageous kind. RUSH-SIZE READY FOR IMMEDIATE USE IN PAPERMAKING continually gaining greater favour in Germany.

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Abyssinian and Artesian Tube Wells.

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The World's Paper Trade Review
A Weekly Journal for Paper Makers & Engineers

Established 1879.

Printed and Published EVERY FRIDAY by W. JOHN STONHILL, at 58, Shoe Lane, London, E.C.

Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England.
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, APRIL 8, 1898.

Proposed Combination of British "News" Mills.

IMMEDIATELY following the announcement that the "news" mill owners in the United States had successfully formed an amalgamation, under the title of the International Paper Co., there were rumours that a combination of the principal "news" mills in this country was under consideration. The very pleasing activity that characterised the "news" industry of this country for so long a period has of late given way to a season of dulness, and complaints have frequently been voiced concerning the increased importation of foreign paper, particularly in the Lancashire district, where papermakers strongly favour the spirit of combination, not only to bring into subjection local competition, but to meet in a united manner the threatened invasion by the powerful organisation recently formed in the United States.

* * *

To Meet Foreign Competition.

THOSE who favour combination allege that it is the only means of successfully meeting American and other competition, and at the same time there would be many advantages accruing to one company which individual mills could not possibly obtain. At the annual meeting of the Papermakers' Association, held recently at the Hotel Cecil, a significant remark was made by one of the speakers in regard to papermakers investing capital in Canada, with the view of obtaining cheap raw material, influencing an export duty on pulp wood, and checkmating American competition in the British market. These objects, it was pointed out, could be more readily achieved by a company—practically a combination—of British papermakers interested. Scandinavia is also recognised as the home of cheap wood pulp production, and an interest by consumers in well-located establishments in Norway or Sweden may not be altogether out of the question.

* * *

Secrecy Observed.

THE promotors of the proposed "news" combine are working very quietly during the preliminary stages, and apparently do not encourage publicity. The following particulars, however, have been obtained by the Press, full prominence being given to the matter in the Manchester papers:—Reliable confirmation has now been obtained of the intention of some of the largest makers of paper in the United Kingdom to combine their businesses in one huge undertaking. Primarily the scheme is intended to meet the keen competition of American makers, and will embrace only those manufacturers who make "news" paper. Eight or ten firms have been approached, and a scheme has been drafted. It is, however, quite in its infancy, but the negotiations are proceeding as rapidly as possible having regard to the tremendous interests involved. It is not expected that the prospectus will be issued for a considerable time, but it is certain that the capital will be of gigantic proportions. Amongst those in the trade much secrecy is being observed.

* * *

The Proposed Capital.

THE various mills approached have, we believe, provisionally supported the proposals, and valuers have visited various properties to report thereon. The proposed capital is mentioned at £3,000,000, and from another source we hear it will most likely be £3,500,000. It is expected that preliminary arrangements will take some time, and possibly three or four weeks may elapse before definite particulars are made known. It all depends whether the principal mills will fall in with the arrangements, and thus guarantee the success of the proposed undertaking. As will be seen from the share list published in this issue several advances in paper mill shares are recorded on the strength of the proposed combine.

* * *

A Former Failure.

AN attempt was made nine years ago to form a combination of the "news" mills of this country under the title of "The News

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Mills Paper Co., Ltd.," the proposed capital being £2,000,000 in shares of £10 each, divided into 150,000 ordinary shares and 50,000 7 per cent. preference shares. There was also to be an issue of £500,000 in 4½ first mortgage debenture stock in amounts of £100 each. Negotiations were entered into with the following firms:—

Clyde Paper Co.
Brown, Stewart and Co.
Peter Dixon and Son.
Carlyle, Son and Co.
C. Marsden and Sons.
Star Paper Mill Co.
Soyland Paper Mill.
Sun Paper Mill Co.
North of Ireland Paper Mills Co.
East Lancashire Paper Mill Co.
Bury Papermaking, etc., Co.
William Chadwick and Sons.
Evans and Owen.
Union Paper Works.

It was stated that the production of paper at the works to be acquired was about 100,000 tons per annum. The arrangements appeared to progress satisfactorily until the prospectus was on the point of being issued, when one or two firms put forth what were considered arbitrary demands and the whole scheme fell through. The successful formation of the International Paper Co. in the United States is certainly an object lesson to the "news" mills of this country.

* * *

Canadian Imports of Paper.

In view of the forthcoming tariff changes in Canada the statistical information we give on another page relating to the imports of paper into that country are of particular interest. It will be seen that Canada imports fairly large quantities of various kinds of paper, and the chief countries from whence these supplies are drawn are the United States, Great Britain, Germany, France, etc. The United States at present take the lead, but surely British papermakers, who will shortly enjoy an exclusive abatement of 25 per cent. of the duty, ought to be able to supplant other countries. There has been some talk of Canada building up an export trade, but at present the exports are not of sufficient bulk as to warrant mention in the official returns, the only class of goods specified being that of paper hangings.

Stocks and Shares.

The rises mentioned last week in North of Ireland and Star Paper shares continue, and Darwen have also come into prominence, as well as Roach Bridge to a lesser extent, all on the news of the proposed "paper combine." Darwen show a rise of ¾; North of Ireland, ½; Roach Bridge, ⅝; and Star pref., ⅛ to ¼. Peebles ord. are, however, ⅛ down, and Waterlow and Sons are quoted ¼ lower, the pref. being now ex-dividend. Bergvik debs. easier by 2 points.

In the chemical market prices have still further dropped, though only fractionally. A large business has been done in Alkali ord. and pref., the former showing a loss of 1/16 and the latter 3/16 (excluding dividend), which are now quoted x.d. Bowman, Thompson are also ex-dividend, but otherwise no change is noticeable. Brunner, Mond ord. are slightly firmer, and prefs. have gained ⅛. Castners seem very weak and are down 6d.

Report received from Mr. F. D. Dean, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
10	10	Bath Paper Mill Co. (Ld.)	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	11½—12½
3	5	Burnley Paper Co. (Ld.)	10	6⅛—6⅜
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pret.	6	7⅛—7⅜
2⅞	3	Collin (Darwen) Paper ,,	nil	4/6—5/5
3¾	5	Darwen Paper Co. ,,	15	9¼—9¼
10	10	E. Lancashire Paper Co. ,,	nil	7⅞—8⅛
10	10	do. do. 6% pref.	nil	8¼—9
5	5	do. do. bonus	nil	3¼—4¼
100	100	Ekman Pulp & Paper Co. Ltd. debs.	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	7—7½
5	5	Hyde Paper Works Co. ,,	nil	1⅛—2
2¾	5	Kellner-Part'gt'n P'p Co,,	15	7⅛—8⅛
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—106
4	5	N. of Ireland Paper Co. ,,	12½	8½—9
7	10	Olive Brothers ,,	10	7⅛—7⅜
1	1	Owen, T. & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2—2½
5	5	Peebles (A. M.) & Son ,,	8½	7⅞—8
5	5	do. 5% cum. pref.	5	6⅛—6⅜
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	6⅞—7¼
1	1	do. do. cum. pref.	5	1¼—1⅜
4½	5	Roach Bridge Paper Co. ,,	10	5⅛—5⅜
5	5	Star Paper Co.	10	8⅛—9⅛
3	5	do. do. cum. pref.	10	6⅛—6⅜
10	10	Waterlow & Sons non.-cum. def.	—	14¼—14¾
		do. do. non.-cum. pref.	4	14¼—14¼ x.d.
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	7⅞—8 x.d.
10	10	do. do. cum. pref.	7	10⅛—10⅜ x.d.
100	100	do. do. debs. (red. 1904)	6	104—106
10	10	Brunner, Mond & Co. (Ld.)	20	41½—42
3½	10	do. do. "New" ,,	20	16⅝—16¾
10	10	do. do. 7% pref. ,,	7	17⅞—17⅞
5	10	do. do. do. new issue	7	8⅛—8⅛
1	1	Castner-Kellner Co. ,,	—	19/6—20/6
5	5	Clayton Aniline cum. pref.	6	5⅞—6⅛
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11⅛
100	Stock	do. do. deb. stock (red. 1912)	4	104—106
10	10	United Alkali Co. ,,	2	1 1/16—1 1/16
10	10	do. do. cum. pref.,,	7	7⅛—7⅜ x.d.
100	Stock	do. mort. deb. (red. after 1901)	5	108½—10. ¼

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls
AUSTRIA	374	—	—
BELGIUM	1698	18	1
DENMARK	80	—	—
FRANCE	902	12	—
FINLAND	38	—	—
GERMANY	3250	90	—
HOLLAND	1551	4	—
JAPAN	78	—	—
NORWAY	3595	—	234
SWEDEN	3988	—	1218
U.S.A.	3604	—	330

Including the Following:—

Quantity	From	Importer	Port
23 bales	Christiania	J. Eberstein	London
95 ,,	,,	J. Hamilton	,,
132 ,,	,,	Alsing & Co	,,
30 ,,	,,	W. Guppy	,,
178 ,,	,,	Davies & Royle	,,
3 ,,	,,	L. Henle	,,
63 ,,	,,	Becker & Wagner	,,
6 ,,	,,	E. Lloyd	,,
26 ,,	,,	D. Webb	,,
38 ,,	,,	W. E. Bott & Co	,,
28 ,,	,,	E. Saunders	,,
5 ,,	,,	Cookson MacDonald & Co	,,
20 ,,	,,	F. Clayden & Co	,,
318 ,,	Fredrikstadt	Olive & Partington	,,
48 ,,	Gothenburg	Becker & Wagner	,,
20 ,,	,,	J. Hamilton	,,
88 ,,	,,	C. Morgan	,,
50 ,,	,,	G. Schenkenwald & Co	,,
358 ,,	,,	J. Eberstein	,,
623 ,,	,,	Skarblacka	,,
8 ,,	,,	J. Spicer & Son	,,
457 ,,	,,	R. L. Lundgren	,,
31 ,,	,,	Crabb & Co	,,
26 ,,	New York	Acton & Co	,,
50 ,,	,,	Butler & Crispe	,,
7 ,,	,,	Wyckoff & Co	,,
30 ,,	,,	Butterick Publishing Co	,,
2 ,,	,,	W. C. Turner	,,
259 ,,	,,	Schenker & Co	,,
48 ,,	,,	P. Sabel & Co	,,
11 ,,	,,	H. Buhrmann	,,
27 ,,	,,	Grosvenor & Co	,,
446 ,,	Uddevalla	D. Gulland	,,
90 ,,	,,	R. L. Lundgren	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various Cwts
AUSTRALASIA	4280	302	271
ARGENTINE	—	535	18
AFRICA	216	103	16
BELGIUM	77	42	105
BRAZIL	75	—	—
B. W. INDIES	—	12	—
CAPE COLONY	466	36	110
CANADA	—	50	—
CHINA	63	43	131
CHANNEL ISLES ...	—	—	73
DENMARK	—	—	46
EGYPT	—	25	—
FRANCE	18	79	18
GIBRALTAR	—	10	53
GERMANY	—	10	48
HOLLAND	—	7	35
INDIA	173	519	217
JAPAN	24	27	38
MALTA	—	—	2
NEW ZEALAND ...	1378	639	861
SPAIN	—	15	7
SWEDEN	17	—	5
S. SETTLEMENTS ...	63	—	—
U.S.A.	—	—	4
W. INDIA	—	28	18

FROM GLASGOW.

	Printings. Cwts.	Writings. Cwts.	Various. Cwts
ARGENTINE	29	—	—
AUSTRALASIA	765	227	16
CHILI	7	—	—
CAPE COLONY	—	—	157
CANADA	—	6	—
HOLLAND	—	—	2
INDIA	250	—	—
NEWFOUNDLAND ...	—	7	—
NEW ZEALAND ...	57	22	11
SPAIN	—	—	22
U.S.A.	—	—	41

JOHNSEN & JÖRGENSEN,

4, 5 & 6, BURY COURT, ST. MARY AXE,

LONDON, E.C.

Sulphite, Soda & Mechanical

WOOD PULPS.

TELEGRAMS: "FISH, LONDON." AGENTS ONLY. TELEPHONE No. 1365.

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SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries.

OFFICES—58, SHOE LANE, LONDON, E.C.

Situations Vacant.

WANTED, smart CUTTERMAN, able to take place on machine in case of sickness.—Apply, Ryburndale Paper Mills Co., Ripponden, near Halifax. 7243

WANTED, MANAGER for a two-machine mill making Engine-sized Writings and Printings from Esparto. A thoroughly capable man will meet with every encouragement.—Apply by letter in the first instance to No. 7,241, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7241

Situations Wanted.

A YOUNG GENTLEMAN, Pole, 26, able to converse and correspond fluently in German, French and Spanish, well up in the English language, desires situation as Foreign Correspondent or Clerk, etc. Expected salary, 30s.—Rakowski, Hydro, Eastbourne. 7240

CLERK wants Situation in paper mill or town house; previous experience in London and at mills. Shorthand.—Address, No. 7,232, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7,232

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

PAPER and Paper Bag Making.—Gentleman with long experience in large mill making Shops and Caps, etc., and all kinds of Paper Bags, and with a good connection, is open for engagement as Secretary, Cashier, or Traveller. Unexceptionable testimonials and references.—Address, No. 7,237, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe Lane, London, E.C. 7237

PAPERMAKER is open to take an engagement as Working Foreman, making common and M.G. Browns, also Rope Browns, having had 11 years experience in last situation.—Address No. 7,247, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7247

WANTED.—Situation as Manager or Foreman; used to printings, news, etc.; 6 years in last mill; good references.—Address, No. 7,248, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7248

Machinery.

WANTED, Revolving Boiler. State price, with full particulars, to No. 7,242, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7242

Miscellaneous.

IT IS WORTH YOUR WHILE TO BUY DIRECT.—The RELIANCE LUBRICATING OIL COMPANY supply on approval "Reliance" high-class NON-CORROSIVE LUBRICANTS, which, through their superiority, have the largest sale in the world. Engine, Cylinder and Machinery Oils, 11½d.; Spindle Oil, 9½d.; Loom Oil, 10½d.; Extra Special Cylinder Oil, 1s. 4d.; Extra Special Engine Oil, 1s. 4d.; Gas Engine and Dynamo Oils, 1s. 6d. per gallon; Light Machine Oil, 10d. Barrels free and carriage paid. Brick Oil, 4d. per gallon. Also Solid and Liquid Oils for all other purposes.—RELIANCE LUBRICATING OIL COMPANY, 19 and 20, Water-lane, Tower-street, London, E.C. Depots at Liverpool, Bristol, Hull, Cardiff, and Glasgow. Telegrams, "Subastral, London." A B C code used. Telephone No. "Avenue," 5,891. 3068

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

REDUCED PRICE 2/6 EACH.

50 Years' Experience in Papermaking

A few copies of this book are obtainable at a reduced price on application to the Author

JAS. ROBERTSON, Lintzford, Lintz Green, Co. Durham

or to the Printers,

ANDREW REID & Co., Ltd., Newcastle-on-Tyne.

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A Size (partly Animal) far more advantageous than Rosin-Size, READY FOR IMMEDIATE USE IN PAPERMAKING, continually gaining greater extension in Germany.

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WATER SUPPLIES

NORTON'S PATENT

Abyssinian and Artesian Tube Wells.

LE GRAND & SUTCLIFF,

Hydraulic Engineers,

Magdala Works, Bunhill Row, London.

THE PAPER TRADE REVIEW is a widely informed and well-managed enterprise, of great value to exporters for its exact Market Reports and statistics of Raw Material.—*Centr'al-Blatt fur die Papier-Fabrikation*, Dresden.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester. Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams

Telegrams—"STONHILL, LONDON."

CHEMICALS.—The market shows signs of improvement. BLEACHING POWDER is quoted £5 2s. 6d. to £5 5s. for soft wood f.o.r. and £6 to £6 5s. hard wood f.o.b. Liverpool. CAUSTIC SODA is in fair request and prices are well maintained for the lower qualities, but in higher grades competition is more prevalent. SODA ASH is firm.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½	5	5 0
,, ,, barrels	...	,, ,,	2½	5	15 0
,, ,, tierces	...	,, Hull	2½	5	2 6
,, ,, ,,	...	Goole	2½	5	2 6
,, ,,	...	f.o.b. Glasgow	2½	5	2 6
Alum Lump) ,,	...	f.o.b. Liverpool	2½	4	12 6
,, ,, barrels	...	,, ,,	2½	4	15 0
,, ,, tierces	...	,, Hull	2½	4	12 6
	...	Goole	2½	4	12 6
,, ,, ,,	...	London	2½	5	2 6
,, ,, ,,	...	f.a.s. Glasgow	2½	4	10 0
Alumina Sulphate	...	f.o.b. Tyne net		3	11 3
Aluminoferric Cake, slabs		Liverpool		2	15 0
,, ,, tierces		,, ...		3	2 6
Alumina Cake, ... slabs		Glasgow		2	10 0
Blanc Fixe	...	f.o.b. Tyne net		6	17 6
Bleach, ...	...	,, ,, net		6	0 0
,, (soft wood)	...	f.o.r. Lancs. net		5	5 0
,, (hard wood)	...	f.o.b. Liverpool net		6	0 0
,, (soft wood)	...	landed London net		6	5 0
Borax (crystals) ...	...	... ... net		14	10 0
,, powdered ...	...	... ... ,, net		15	0 0
Chloride of Barium	...	f.o.b. Tyne net		6	15 0
Caustic White 76%	...	f.o.b. Liverpool net		8	7 6
,, 74%	...	,, ,, net		8	2 6
,, 70%	...	,, ,, net		7	10 0
,, 70%	...	f.o.r. Lancs., net		7	7 6
,, 60%	...	f.o.b. Liverpool net		6	10 0
Caustic Cream, 60%	...	f.o.r. Lancs. net		5	15 0
,, 60%	...	f.o.b. Liverpool net		5	17 6
,, Bottoms 60-62%	...	f.o.r. Lancs net		4	12 6
Soda Ash Carbonated 58%		f.o.b. Liverpool net		4	15 0
,, ,, 48%		,, net		4	12 6
,, ,, 58%		f.o.r. Widnes net		4	10 0
,, ,, 48%		,, ,, net		4	5 0
,, Ammonia 58%		f.o.b. Liverpool		4	5 0
,, ,, 48%		,,		4	0 0
,, Caustic 48%		,,		4	12 6
,, ,, 57-58%		,,		4	17 6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5	0 0
,, 10-ton lots		ex ship Liverp'l net		5	5 0
Oxalic Acid	...	f.o.b. Liverpool 3½%	per lb	3	
Salt Cake	...	on rail. in bulk		1	0 0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35	0 0
,, (2nds)	...	,,		33	0 0
Soda Crystals ...	...	f.o.b. Tyne net		2	17 6
,, ,, ...	...	ex ship Thames 2½%		2	17 6
,, ,, ...	...	f.o.b. Liverpool 5%		3	0 0
Sulphur, roll ...	...	f.a.s. works 2½%		6	5 0
,, flowers ...	...	,, ,, 2½%		7	5 0
,, recovered	...	,, ,, 2½%		4	15 0
hate of Ammonia	,,	,, ,, 2½%		8	15 0
of Copper	...	,, Liverpool 5%		16	5 0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	4	10 0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15 0
Blanc Fixe (c.i.f. London)		7	0 0
White Sugar of Lead		24	10
Zinc Oxide		18	5 0
Bleaching Powder		5	15 0

CHEMICAL WOOD PULPS.—The market is firmer. There is more enquiry for SULPHITE; American mills find the home market more profitable at the present time than cultivating an export trade. SODA pulps are steady.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8 12 6	to 9	0	0
,, Superior ,, ...	9 5 0	,, 9	10	0
,, Bleached, ...	11 10 0	,, 15	0	0
SODA, Unbleached, Common ...	8 5 0	,, 8	10	0
,, Extra...	8 15 0	,, 9	5	0
,, Bleached	10 10 0	,, 12	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 130 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.	to 25.
,, Bleached	31.	,, 36
SODA, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.
SULPHATE, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.

AMERICAN QUOTATIONS

AMERICAN SULPHITE, Unbleached	$1.62	to 2
,, SODA Bleached	1.70	2
FOREIGN SODA, Unbleached ...	2.15	2.10
,, ,, Bleached	2.70	2.80c.
,, SULPHITE, Unbleached	2.30	,, 2.75c.
,, ,, Bleached...	3.25	,, 3.30c.

MECHANICAL WOOD PULPS.—Business is rather quiet. Most makers are reported to be well sold, and, therefore, the market is not flooded with offers. In some instances easier prices have resulted from re-sales. Arrivals from the United States this week are rather heavy.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£6	10	0
Pine, Dry £4	5	to 4	12 6
,, Moist	2	2 6	,, 2 7 6
Brown, Dry	4	15	0
,, Moist	2	10	

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt)

Pine Pulp, 50% moisture, ordinary ...	Frs. 11.	to 12.
,, ,, fine ...	12.50	,, 13.
,, dry, ordinary	11.50	,, 11.75
,, ,, fine	11.75	,, 13.
Aspen, ,, ,, ...	16.	,, 17.50
Half-Chemical Brown, 50% moisture	10.50	,, 11.
,, ,, dry ...	12 50	,, 13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
1600 bales	Fredrikstadt	J. Sharp	London
1120 ,,	,,	Christophersen & Co	,,
200 ,,	Cologne		,,
2862 rolls	Antwerp		,,
5850 bales	Drammen	E. Lloyd Ltd	,,
150 ,,	Boston		,,
160 ,,	Christiania	Becker & Co	,,
1500 ,,	Stettin		,,
2920 ,,	Portland, Me.		,,
400 ,,	Gothenburg		,,
247 ,,	,,	Green and Co	,,
520 ,,	,,	Bott and Co	,,
55 ,,	,,	R. L. Lundgren	,,
5 ,,	,,	O. Konig and Co	,,
4 60 ,,	Hambro		,,

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Quantity	From	Importer	Port
137 bales	Rotterdam		London
2952 ,,	Antwerp		,,
39 ,,	Gothenberg		Liverpool
60 ,,	Ghent		,,
449 ,,	Portland		,,
28 ,,	Rotterdam		,,
110 ,,	Christiania		Hull
444 ,,	Gothenburg		,,
132 ,,	Hango		,,
9 ,,	Rotterdam		,,
2000 ,,	Arendal		Manchester
2783 ,,	Sarpsborg		,,
1 ,,	Christiansand		,,
2300 ,,	Christiania		,,
2354 ,,	Drammen		,,
1200 ,,	Skien		,,
1490 ,,	Gothenburg		,,
51467 ,,	Bucksport		,,
460 ,,	Drontheim		Leith
385 ,,	Hambro		,,
37 ,,	Rotterdam		,,
658 ,,	Gothenburg		Granton
550 ,,	Skein		,,
1230 ,,	Drammen		,,
12 ,,	Malmo		Grimsby
180 ,,	Portland		Glasgow
1269 ,,	Christiania		Grangemouth
120 ,,	Rotterdam		,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	3012 bales	HOLLAND ...	331 bales
,, ...	2862 rolls	NORWAY ...	23087 ,,
FINLAND ...	132 bales	SWEDEN ..	3861 ,,
GERMANY ...	2485 ,,	U.S.A.	55166 ,,

ESPARTO.—There has been a full amount of enquiry for new crop Spanish contracts, and considerable business has been carried through at sellers quotations. African maintains the firmer tone recently shown.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—Fair to Good	£4 15 0	to	5 2 6
,, Fine to Best	5 12 6	to	5 17 6
Oran — Fair to Good	2 17 6	to	3 0 0
,, First Quality	3 1 3	to	3 2 6
Tripoli — Hand-picked	2 17 6	to	3 0 0
,, Fair Average	2 12 6	to	2 15 0
Bona & Philippeville	3 1 3	to	3 2 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
2981 bales	Arzew		Liverpool
31 tons	,,		,,
400 ,,	Almeria		Glasgow
3234 bales	Gourin		Liverpool
4813 trusses	Oran		Grangemouth
700 tons	,,	Morris and Co.	Dundee
26 ,,	,,		Liverpool
3277 bales	,,		,,

STRAW.—Supplies fairly good. Prices:

Oat Straw, ...	c.i.f. London	37/0	; f.o.r. Goole,		37/6
Wheat ,, ...	do.	37/0	;	do.	37/6
Rye	do.	50/6	;	do	50/0

STRAW PULPS.—Market firm.

Prices, c.i.f. London, Hull or Leith.

German, dry, No. 1	£14 0 0
,, No. 2	£13 0 0

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings	£3 0 to £4 0

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

WASTE PAPERS.—Steady demand.

Cream Shavings ...	10/0	Small Letters ...	3/0
Fine ,, ...	8/0	Large ,, ...	4/3
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns	3/3
White Waste ...	1/9	Dark ,, ...	2/0
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/6
Blue Paper	2/0	Strawboard Cuttings	1/3
Crushed News	2/0	Jacquards	2/0

For Export: 2s/- per ton extra.

FOREIGN RAGS.—The demand for French paper stock is well maintained. Belgian and Dutch packers report more enquiry. Imports of rags at British ports during the past week were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
130	Ghent	Hull	119	Ghent	Goole
10	Hambro	,,	56	Amsterdam	,,
130	Bordeaux	,,	101	Antwerp	Grimsby
197	Copenhagen	,,	92	Hambro	,,
181	Konigsberg	,,	59	Rotterdam	,,
304	Amsterdam	,,	562	Dieppe	,,
106	Harlingen	,,	94	Bordeaux	Liverpool
9	Rotterdam	,,	64	Constantinople	,,
45	Dunkirk	,,	71	Buenos Ayres	,,
63	Bremen	,,	250	Ghent	,,
166	Antwerp	London	74	Amsterdam	,,
140	Rouen	,,	1	Barcelona	,,
22	Bordeaux	,,	24	Antwerp	,,
246	Rouen	,,	68	St. Nazaire	Newhvn
76	Cherbourg	,,	127	Caen	,,
111	Rotterdam	,,	83	Jersey	Southamptn
63	Amsterdam	,,	29	Antwerp	Manchestr
88	Dieppe	Goole	16	Rotterdam	Leith
363	Hambro	,,	17	Copenhagen	,,
151	Boulogne	,,	11	Antwerp	,,
73	Antwerp	,,	49	Amsterdam	,,

Totals from Each Country:

ARGENTINE	71 bales	GERMANY ...	528 bales
BELGIUM ...	503 ,,	HOLLAND ...	847 ,,
CHANNEL Isles	83 ,,	PRUSSIA ...	181 ,,
DENMARK ...	214 ,,	SPAIN ...	1 ,,
FRANCE ...	1749 ,,	TURKEY ..	64 ,,

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7 6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ..	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope coils)	8/0	Not ree from wood	5/0

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12 6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3,0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Lines	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cutt ngs	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	12/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute No I 6/-: No. II	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	4/0
SPF	11/0	CSPFFF	10/0
FF	8/0	CSPFF	16/0
FG	8/6	CFB (Blue)	/0
FFX	7/0	CFX (Coloured) ...	4/0

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FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchette Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Bl e Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ..	3/6	,, Stay ..	15/0

PRUSSIAN RAGS.

O.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF	12/6	Jute I	3/6
FG	10/0	,, II...	2/0
LFB	8/0	Rope I...	8/6
FF	5/6	,, II ...	6/0

NORWEGIAN RAGS.

O.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	2nd Canvas ...	7/0
and ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/0

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* At Smyrna and Salonica.

HOME RAGS.—LONDON: Trade continues good, with a strong demand for Ropes and Gunny. — BRISTOL: Steady enquiry. — MANCHESTER: Moderate business passing at former prices.—EDINBURGH and GLASGOW: There is a good trade at well maintained figures.—DUBLIN: Fair demand at unchanged values; stocks low.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/0
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected) ...	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/0	Gunny	2/0-2/3

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	2/6-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/6
Outshots	12/0	W. Manilla Rope	7/0
Mixed Fines...	14/0	Tarred Manilla Rope	5/6
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Canvas (best)	15/0	Bagging...	2/3
2nd	8/	,, (clean) ...	3/0-4/0

GLASGOW.

Fines	12/6-16/0	Canva No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues	3/3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	9/0

DUBLIN.

Whit Cuttings ...	16/0	Mill Bagging	2/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp	6/0
Light Prints	2/6	Rigging	10/0
Black do.	1/6		

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WO	WW
4/10½	5/-	5/3	5/4½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

STARCH.—Prices are unchanged.

F.o.r. London, less 2½%

Maize—Crisp, £9 5/-; Pearl, £6 5/-; Powder, £6 15/0 Special £14.

Farina—Prime, £12 0/-; B.K.M.F., £14 0/-.

Delivered, less 2½%:

Rice—Special (in chests), £19 0/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£1

SIZING.—Prices for Glues and Sizings have now become steady. Buyers recognise the advances as inevitable, and are now fixing up contracts and securing supplies. Demand steady, but good and reliable.

English Gelatines per cwt.	90/0	to	120/
Foreign ,, ...	70/0	,,	100/0
Fine Scotch Glues	45/0	,,	60/0
Long Scotch Glues	35/0	,,	40/0
Common Black ,, ...	25/0	,,	28/0
"Town" Glues	38/0	,,	45/0
"Bone" Glues	26/0	,,	30/0
Foreign Glues	28/0	,,	35/0
Bone Size	5/6	,,	10/0
Gelatine Size	6/6	,,	10/0
Dry B.A. Pieces	50/0	,,	55/0
,, English Pieces	35/0	,,	45/0
Wet ,, ,, ...	8/6	,,	9/0
,, Sheep Pieces	3/0	,,	4/0
Buffalo Hide Shavings	32/0	,,	40/0
,, Picker Waste	32/0	,,	35/0

COLOURS.—There is a better enquiry.

Mineral Black ... cwt.	3/6	PASTE COLOURS with	
do. superior ... ,,	4/0	60% of colour, as follows:	
Pure Ivory Black ,,	12/0	Orange Pulp ... cwt.	4c/0
Ochre ... ... ,,	2/3	Golden Yellow Pulp	30/0
French J. C. Ochre ton	60/0	Lemon ,, ,, cwt.	30/
Chrome (pure) ... cwt.	40/0	Prussian Yellow ,,	36/0
Red Oxide ... ... ,,	4/6	Green (free of arsenic	26/0
Umber, Devonshire ,,	50/0	Paste Blue, 20% ...	18/0
do. Turkish ... ,,	40/0	,, 33%; 26/0; 45%	45/0
Lamp Black ... ,,	5/0-7/6	Imperial Yellow (dry)	16/0
Ultramarine (pure)	35/0-45/0	(less 2½% d/d)	
Cochineal ... ... lb.	4/3-2/0		

MINERALS. — Market is quiet. CHINA CLAY is in moderate demand. FRENCH and ITALIAN CHALKS are in steady request. BAUXITE is firmer.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine... ...	28/0	less 2½%; del. Lancashire...		38/0
Pottery Super.	24/0	,,	,, ...	34/0
Ball Seconds ...	20/0	,,	,, ...	30/0
Seconds	15/0	,,	,, ...	25/0
Thirds	11/0	,,	,, ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 9/0 to 23/6, bags 4/0 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

French Chalk, W.E., W.I.N.S.E.R., W.O. and other brands, 58/0, 64/0, 73/6, and 75/0 per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 2/6 per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-,

Patent Hardening (2 ton lots) f.o.r. Lancs., £3 5/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.

Magnesite (in lump) 39/6 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.

Bauxite, minimum alumina, 60%, 16/3 f.o.b.

Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.

Satinite, £3 to £3 6s. 6d., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/3 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0.

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METALS. — LONDON: COPPER quiet; TIN firmer; LEAD steady. Tuesday's official closing prices:

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	51	2	6	51	7	9
,, three months	51	10	0	51	15	0
Tough	54	5	0	54	10	0
Best selected	55	0	0	55	10	0
Strong Sheets	62	0	0			
TIN—						
Fine foreign, cash	65	5	0	65	15	0
,, three months	65	17	6	66	7	6
LEAD—						
Spanish...				12	15	0
English...	12	15	0	12	17	6

NEW PATENTS.

APPLICATIONS.

6,940. Improvements in and relating to the surfacing of paper. The Westfield Paper Co., Ltd., and G. Stewart.

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1897.

5,844. Pulp strainers of papermaking machines. Westwood.

6,054. Apparatus or machinery for the manufacture of vegetable parchment paper. Rigby, Sweetapple and Clarke.

6,917. Machine for cutting or tearing up rags, ropes and the like. Jensen.

6,929. Apparatus for electrolysing sodium, chloride or other salts. Taylor, Cook and Montgomery.

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BATCHELOR, Richard D., Artesian and Consulting Well Engineers, 73, Queen Victoria Street London, E.C., and at Chatham.

ISLER, C. & Co., Bear Lane, Southwark, London, S.E.

CHINA CLAY.

ROGERS, J. & Co., Truro, Cornwall.— Agents, W. G. Taylor and Co., Ltd., 83, Queen Victoria Street, London, E.C., and 44B, Lancaster Avenue, Manchester.

W. SINGLETON BIRCH & SONS, Ltd., 15, Upton Street, Manchester. Mines: Rosevear, St. Austell, Cornwall.

COLOURS.

CARDWELL, J. L. & Co., Commercial Buildings, 15, Cross Street, Manchester. Specialties: Mineral Black, Ven. Red, Ochres and Umbers.

HINSHELWOOD, Thomas & Co., The Glasgow Colour Works, Glasgow. Colours and shades matched exactly.

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CAFFERATA & Co., Newark-upon-Trent.

HOWE, John & Co., Carlisle.

WINSER & Co., Kegworth Mills, near Derby, and 312, Deansgate, Manchester. Also importers of China Clay.

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General Notes.

JAPANESE TARIFFS.—We are informed that the Japanese Government are raising their tariff and according to telegrams to the Hamburg papers the new conditions will come into force in September.

GERMAN COMPETITION IN BRITISH COLONIES.—A correspondent writes to the *Times* from Bedford, Cape Colony, to call attention to a German publication, a copy of which he encloses, intended to circulate in British colonies and to assist German trade. "Observe," the correspondent says, "the paper is published in Germany (at Bunzlau, in Silesia), advertises none but German wares, and, last straw, is printed in English. The only consolation one can draw from the latter fact is that it constitutes a sort of backhanded tribute to our widespread influence. The leading articles are devoted to violent and brutal invective against Great Britain and British products. . . . My object in writing is to bring before British manufacturers and journalists the fact of this being done and to urge them to consider the desirability of retaliating in the same manner. Possibly this is done to some extent, but it is as well to keep these things well before the public eye. These Germans have the knack of persistency, and of taking infinite pains to secure orders in a much greater degree than the average Britisher." The paper is called *Export Trade*, and the copy before us is marked "Edition II. Africa. For the Cape, Natal, Orange, Transvaal, Betchuana, Delagoa, Zansibar, German East Africa, Congo, West Coast, St. Helena, Ascension, etc." This journal appears monthly, and is forwarded free of charge alternately to all importing firms in the above places, as well as to the European shipping houses interested in the export trade to Africa. The malevolence of the articles is only equalled by the grotesqueness of the English in which they are written.

RECOLLECTIONS OF A GREAT PUBLISHING FIRM.—Under the auspices of the Edinburgh Typographia, Mr. C. E. S. Chambers exhibited and described a number of rare books, with notices of early works printed by William and Robert Chambers. Mr. J. T. Clark, keeper of the Advocates' Library, presided. Mr. Chambers stated that all the books were printed in Edinburgh, and for the most part had formed the earlier works of William and Robert Chambers. All of them were very scarce and in great request by a certain body of collectors. Their intrinsic value was very slight, but as examples of the early printing of the firm of which he was now the head they were curious. Most of the books were from the library of William Chambers but some were from that of his grandfather, Robert Chambers. The first volume described contained original letters from the French prisoners to his great-grandfather James Chambers. The first book printed was an edition of Burns. That book he had never seen, and it was very rare. He had a copy of the second book printed, "The Exploits of the Scottish Gypsies or Tinkers" (1820). Another was "The Black Dwarf." Both of these were very valuable as rare books. An autograph book of sales by William Chambers contained the following interesting piece of autobiography in William Chambers' writing:—"I began business on the 18th June, 1818, and now on the 26th August, 1819, I have drawn since commencing £157 2s. 6d., of which £61 3s. 6d. is profit. I have in my possession 400 volumes. Prime cost £29, of which I owe £10, which leaves remaining a stock of £19, my own, besides ready cash £7, which makes my own stock £26 books and cash. June, 1820, my stock amounted to £29. June, 1821, my clear stock amounted to £56 10s., besides bad debts to the amount of £22." Mr. Chambers next showed the original MSS. of Robert Chambers' "Popular Rhymes of Scotland," written between 1825 and 1830. The work was declined by Constable, but was published by the firm, and had sold steadily ever since. In connection with the "Life of Burns," he had the diary of Robert Chambers in his tour of the Burns localities, but he would be afraid to publish it now. It would excite a controversy, but it would be a pity to disturb the romance that encircled a great name. Amongst other rare books shown otherwise than those printed by the firm, were the "Edinburgh Directory of 1784," and early editions of Allan Ramsay's poems. The English and American demand for Scotch books was growing, and Mr. Chambers believed it would become greater every year.

JOHNS, SON AND WATTS, LIMITED.—Registered with a preference share capital of £55,000, and ordinary shares amounting to £30,000, offers to the public £20,500 of the preference shares. The company is formed to purchase for £100,000 the business of Johns, Son and Watts, Ltd., who are described as the well-known manufacturers of plain, fancy folding wire-sewn and metal-edged boxes, chromo lithographers, letterpress printers, gold blockers, etc., of City-road, E.C., and Old Ford, E.

JACKSON'S PRINTING & PUBLISHING CO., LTD.—Registered with a capital of £10,000 in £1 shares, to enter into an agreement with W. J. Gardner, and to carry on the business of newspaper and magazine proprietors and publishers, printers, advertising agents, booksellers, bookbinders, music sellers, etc. The subscribers are to appoint the first directors. Qualification, 100 shares. Remuneration, £200 per annum, divisible.

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ANGLO-GERMAN COMMERCIAL RELATIONS.

It will be apparently impossible, writes the Berlin correspondent of the *Daily Telegraph*, to conclude the negotiations for a new commercial treaty between England and Germany, to take the place of the old one denounced by England nearly a year ago, before the end of July. A provisional agreement has, therefore, been devised by the Governments of the two countries to tide over the unavoidable interval. The text of this agreement will shortly be laid before the German Reichstag. The following paragraph has gone the round of the German press:—"The Customs legislation of the two countries rests at present on totally different bases. In England there is only one general Customs tariff, applicable equally to the products of all countries. If the Anglo-German most favoured nation treaty should expire on August 1st without at least a provisional agreement taking its place, Germany would continue to enjoy for her products in England and in all the English colonies, with the exception of Canada, the most favoured nation treatment. A special Act of Parliament would be necessary in England to authorise the exclusion of Germany from this privilege. The case is different in Germany. The German Empire, besides the general Customs tariff, the details of which are fixed by law, has a treaty tariff, whose lower duties compared with the general tariff are regulated in treaties, and are only good for those countries to which the most favoured nation clause is conceded by treaty. Thus, when the existing Anglo-German treaty falls in, the duties of the general tariff—in some cases considerably higher—would be levied on the products of England and her colonies. A law passed by the Reichstag would be necessary to permit of England being any longer treated on the footing of the most favoured nation. Although England's exports would not be very heavily affected hereby, as they are for the most part industrial products, and the industrial duties are only slightly altered in the commercial treaties, it would be another matter in regard to the English colonies, which send, for the most part, agricultural products to Germany—as, for instance, in the case of Australia and East India. It is most certainly desirable, in order to be able to conclude a new satisfactory most favoured nation treaty, that a state of one-sided strife with differential duties should be avoided, and that an opportunity for further negotiations should be given by a provisional agreement, which, of course, will have to be approved of by the German Reichstag. Whether it be not possible also to postpone the date of the coming into force of the new Canadian Customs Act is another matter for consideration."

Meanwhile, it must not be overlooked by people in England that active steps are being taken by the Germans to be thoroughly well provided with the arms of argument at the board of discussion. The Prussian Government is obtaining full information for its guidance in the drafting of future commercial treaties, and for this purpose committees have been long since formed to inquire into the statistics of production in the following branches:—The textile, metal, chemicals, glass, and paper industries; in the production of articles of food consumption; and in agricultural production. The committees have been examining experts in all these branches. Hand in hand with the policy of collecting information as regards facts runs the policy of the German Kaiser in strengthening the Imperial German Navy. The new Naval Bill is being carried through the Imperial Diet with a facility that His Majesty and his supporters could not have dreamt of a year ago. Primarily, all this is directed against England—all in fair play and above board rivalry. Presumably the authorities in England are fully informed of the watchfulness of German officials. It is well, however, that the general public also on your side of the Channel should be reminded of the diligence and activity of those around them, for the British public must support the Government in the negotiations for the conclusion of a new commercial treaty, if such is to be drafted, in order that adequate and fair terms may be obtained for British traders. The merchants of Germany can trade on equal terms with British merchants in Great Britain and in any part of the world that has been opened up to trade by British enterprise. The merchants of Great Britain, on the other hand, do not enjoy reciprocal privileges in Germany or in Germany's colonial possessions. On the contrary, everything is done by the German Government, within and without the bounds of the empire, to handicap rivals to the advantage of their own subjects. My object is not to foment indignation or adverse criticism of this attitude, but only to lay stress upon a fact, and it is advisable, now that the opportunity is there, to take measures to obtain for British enterprise on German soil a fair treatment, similar to that enjoyed by Teutons on British soil. It is not difficult for Germans to induce their Government to facilitate matters for Teuton merchants. Ministers hold a position in this country of parents and guardians for everybody, so the Government, of their own accord, and as a matter of course, consider that the primary duty of a German official at home or abroad is to back up the merchants of the Fatherland against the competition of strangers.

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Re Benns Brothers and Company,

Wholesale and Export Stationers.

Under the failure of this firm which carried on business at 12, St. Benet's-place, Gracechurch-street, the first meeting of creditors was recently held at the London Bankruptcy Court, before Mr. E. Leadam Hough, sen., official receiver. The firm consisted of John Benns, Walter B. Benns, and Hy. Geo. Curry. The last named gentleman, however, was only a sleeping partner. He joined the firm in June, 1896, introducing a sum of about £700 to the capital account, and was also a member of Curry, Simpson and Curry, builders, Brockley, which firm is also in the Court. It appears from the statement of Mr. John Benns that shortly after starting in partnership with his brother in November 1895, as wholesale stationers at St. Benet's-place, they entered into an agreement with M. A. Peraut, of Montmorency, near Paris, the manufacturer of a patent adhesive paper and line tape for repairing books, music, etc., whereby he granted to them the monopoly in Great Britain and British possessions of the sale of that article. It was to be sold at sixteen shillings per gross, less a discount of 25 .. The debtors advertised the article in the usual stationery trade journals, and about March, 1896, they became aware that a keen competition existed. Their customers informed them that they could buy the same article at nine shillings per gross. Upon that they communicated with M. Peraut informing him that there was a great sale of the adhesive linen tape in the London market other than through their firm. He replied to the effect that he had not shipped any goods to England except through them. It later transpired that English manufacturers then began to make a similar article at a lesser price, which had the effect of reducing the sale price to 5s. 6d. per gross. The business was continued until June, 1897, when, owing to the heavy expense of trying to establish the business, the debtors consulted their solicitor, who advised them to transform it into a limited company. An arrangement was entered into for its sale to the Stationery Specialite Syndicate, Ltd., at the price of £3,000 in fully paid shares. Mr. J. Benns further states that since June he has been employed by the Syndicate as a traveller on a commission of 10 per cent. upon all sales. Prior to 1895 he represented two wholesale stationery firms. He personally introduced no capital into the business, but his brother, Mr. W. B. Benns, provided about £600. No accounts have been filed, but the debtors roughly estimate their liabilities at £570, and have in the shape of assets, book debts to the full value of £450, and their shares in the Syndicate. It was stated that the book debts had been handed over to a receiver for collection, and that they were mainly regarded as irrecoverable. Mr. Worley, a creditor, said he knew most of the houses with which the debtors had had dealings, and he was strongly of opinion that the debts were of considerable value. He hoped that the matter would receive attention from the official receiver and trustee. The Chairman said of course that point would be investigated in time. He understood with regard to the Syndicate shares that they were absolutely worthless, a resolution having been passed by the shareholders for a voluntary winding up. Several judgments had been obtained against the debtors, and a couple of executions had been levied thereunder between January and June, 1897. The failure was attributed to the heavy expenditure in the attempt to establish the business. The receiving order was made on March 8th, upon the petition of the Patent Enamel Co., Ltd., but at present the only proof in order was by Messrs. Emrik and Binger, who claimed £43 15s. 2d. Asked if any offer was forthcoming, Mr. W. B. Benns said he had been away for some days in Scotland and had not had time to go into the matter. If an adjournment could be granted they hoped to submit a scheme of arrangement under which the creditors would receive the greater part, if not the whole, of their money. After some discussion the Chairman remarked that the estate could not be prejudiced by an adjournment, and held the meeting over until April 7th, the public examination being appointed for 13 days later.

WILLIAM BROWN and SON, Ltd.

Registered with a capital of £10,000, in £5 shares, to adopt an agreement with W. Brown, and to carry on the business of printers, lithographers, bookbinders, account book manufacturers, advertising agents, etc. The subscribers are: W. Brown, 46, Kenyon-street, Ashton-under-Lyne, printer, one share; Mrs. A. Brown, 46, Kenyon-street, Ashton-under-Lyne, one; A. Brown, 13, Fletcher-street, Ashton-under-Lyne, printer, one; Mrs. F. Brown, 13, Fletcher-street, Ashton-under-Lyne, one; Mrs. J. E. Shaw, 119, Wellington-road, Ashton-under-Lyne, one; Miss A. Brown, 46, Kenyon-street, Ashton-under-Lyne, one; S. Brown, 46, Kenyon-street, Ashton-under-Lyne, clerk, one. Registered without articles of association by J. Clayton and Son, Ashton-under-Lyne.

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A C	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z	210	82½	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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Re Vincent Brooks, Day & Son,

Lithographers and Printers.

A sitting of the London Bankruptcy Court was held recently before Mr. Registrar Giffard, for the public examination of Frederick Vincent Brooks and Alfred William Brooks, trading as above at 6, 8, and 10, Gate-street, Lincoln's-Inn-Fields. The debtors, who filed their petition on February 4, have furnished accounts showing 156 unsecured creditors, £15,082 2s. 8d.; a fully secured creditor for £1,484 16s. 3d., holding security valued at £1,500; a partly secured creditor for £509 15s., with security to the value of £440; liabilities on bills, £4,370 9s. 9d. (not expected to rank against the estate); and preferential creditors for rent, rates, taxes, and wages, £578 18s. 4d.; making a total indebtedness of £22,026 2s., of which £15,151 17s. 8d. is expected to rank for the purposes of dividend. The assets are estimated at £9,985 6s. 7d., and consist of cash at bankers, £1 1s. 11d.; cash in hand, £27 17s. 6d.; stock in trade, £250 (estimated cost, £550); work in progress, £250 (cost, £500); finished work, £150 (cost, £300); plant, machinery, tools, trade fixtures, fittings, utensils and office furniture, £3,697 7s. 8d.; gas, steam, water, and electric fittings, £193 13s. 10d.; type, £541 7s. 1d.; zinc plates, £72 4s. 9d.; litho stones, £2,200; pictures, plates, copyrights, etc., £331 2s.; surplus from Mr. A. W. Brooks' separate estate, £91 9s. 9d.; surplus from Mr. F. W. Brooks' separate estate, £366 6s. 10d.; good book debts, £1,703 0s. 9d.; doubtful debts, £134 9s. 7d.; and bad debts, £1,433 9s. 6d.; together estimated to produce £94 10s. 9d.; and the estimated surplus of £15 3s. 9d. from the security held by the fully secured creditors. The deficiency of £5,745 9s. 5d. is explained by the following account which dates from October 1st, 1897, viz.:—

	£ s. d.	£ s. d.
Bad debts (since 1st October)		26 13 10
Depreciation in the value of machinery, plant, fittings, type, etc., as now estimated for realisation		10,758 14 7
Depreciation in the value of stock-in-trade, work in progress, and finished work as now estimated for realisation		700 0 0
Fee for valuing business		130 0 0
Loss on trading		340 15 0
Drawings—A. W. Brooks ...	141 3 2	
,, F. V. Brooks ...	305 1 3	
		446 4 5
		£12,402 7 10
Deduct—		
Apparent surplus as per balance sheet of 30th September, 1897	5,469 11 4	
Personal assets given as security for a firm's debt ...	440 0 0	
Liabilities in firm's books, in respect of which no claim is now made	269 10 6	
Surplus transferred from the bankrupt's separate estates	457 16 7	
		6,656 18 5
Deficiency as per statement of affairs		£5,745 9 5

Replying to the official receiver, Mr. F. V. Brooks stated that at the date of the receiving order he was trading in partnership with his brother, Alfred William Brooks. The business was acquired by their late father in 1867, and eleven years later they were admitted as partners with one-sixth share each, the remaining four-sixths being retained by Mr. Brooks, senr. The latter died in 1885, leaving to witness and his brother another sixth share. The remaining three-sixths share was to be held in trust for their mother during her lifetime, and at her death it reverted to them. Mrs. Brooks, senr., died in 1892, and since then witness and his brother had been equal partners. Mr. Grey (assistant official receiver): Was it a good business? Witness: Well, we thought it was, and we do not think it is a bad one now. Examination continued: They printed a number of periodicals and executed a good deal of general printing. The failure was caused by lack of funds. There had always been an insufficiency of cash capital, but they had hoped to make it a success, and had worked hard with that end in view. In fact, their father died "in harness." A good many bad debts had been contracted, especially during the past year or two. Then, again, they had always treated their employees leniently; had paid perhaps salaries at too high a rate; and had declined to part with old servants who had been with them for a number of years. Undoubtedly it would have been a profitable business if it had been worked with a little more care, especially in the matter of book debts. During 1897 they made two bad debts together amounting to £1,400. Balance sheets had been prepared annually. They showed that at September 30th, 1893, the firm had a surplus of £9,800 9s. 11d., which dwindled down to £8,776 19s. 6d. in 1894; £8,451 6s. 11d. in 1895; £8,069 0s. 1d. in 1896; and £5,489 11s. 4d. at September 30th, 1897. Those sheets further showed that a loss of £794 16s. 11d. was made in the year ended September, 1893; a loss of £693 12s. 5d. in 1894; profits of £73 11s. 1d.; and £145 17s. 5d. in 1895 and 1896 respectively; and a loss of £1,709 1s. 11d. in 1897, after writing off £1,407 for bad debts. The last balance sheet was completed after the making of the receiving order for the purpose of the statement of affairs. A professional valuation was then taken of the plant, machinery, fittings, type, etc., and that showed the value at £17,365, which was considerably in excess of the figures entered in the last balance sheet. That valuation showed sufficient assets in the estate to pay all the debts in full and provide a good margin. The assets were all free and had passed into the hands of the trustee. It was true that in spite of having had a surplusage of assets the firm had been short of money for a good many years. That was the case even in his father's lifetime, as 10 per cent. interest had been paid on loans so far back as 1867 and for

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over 21 years. When witness and his brother took over the business they were short of money, but they diminished the rate of interest very considerably. Mr. Alfred Wm. Brooks was not in robust health, and generally looked after the books, witness taking the active and general management of the business, including the financial arrangements. It was very seldom that witness consulted his brother upon the latter arrangement. Various means were employed to raise money for the purposes of the business. In the first place they would exchange cheques with other firms; secondly, they would raise money by means of accommodation bills; and thirdly, by loans. The cross cheque transaction had amounted to £118,525 in the past three years. They merely provided the firm with accommodation for one, two or three days. Witness agreed that it might be a bad form of finance, but asserted that it was very generally used. The total amount of accommodation bills in the hand of holders for value was £4,000 odd. In all cases those bills were discounted in the ordinary way. The arrangement was for the proceeds to be divided between the partners to the bill, and for the amounts to be provided in the same proportions when the bills matured. Some of the bills had matured since the receiving order was made, and it was quite possible that a claim in respect thereof might be made against the estate. Witness was not aware of that possible liability when the statement of affairs was lodged. There were other bills that had yet to reach maturity. The Assistant Receiver drew the witness's attention to the fact that all the bills were drawn for odd amounts, and asked the reason for that proceeding. Mr. Brooks replied that it was not customary to draw for level amounts. Pressed upon the point, he admitted that it made them appear like trade bills. He did not represent to their bankers that those were trade bills, but he had stated on one or two occasions that they were renewals, which was actually the case. He certainly did not volunteer the information to the bankers that he was presenting accommodation bills, and naturally was not anxious that they should be regarded in that light. Cheques were often drawn to a number or to bearer. The assistant receiver: Why was that? Was it so that they should not be recognised as being drawn to the same parties over and over again? Witness: Oh, no. The bankers recognised the cheques as coming from the same parties, because they were cleared from a particular bank. On one occasion they asked him if it was not curious that they had a cheque and bill from the same person at the same time. He explained that it was a renewal, and those transactions were so numerous that the bankers used to speak of the numbered cheques as "So-and-so's cheques." Trade accounts had also been paid by means of numbered cheques, that having been an old custom of Mr. Brooks, senior. Witness emphatically denied that the object in drawing cheques to numbers was to conceal the nature of the transactions from the bankers. It was quite true that the amounts of the exchange cheques had been slightly varied, but that was at the request of the other parties, and witness's own bankers were fully aware of the fact that they were exchange cheques. In fact the bank had assisted them in the matter by clearing the cheques especially for them in the morning. The debtor was taken in detail through various cheques and bills, and in each instance he denied that he had represented them to be trade bills, or that he had made misrepresentations of any kind. He was also questioned at some length with regard to the circumstances under which he obtained a cheque for about £100 from Spalding and Hodge, Ltd., on the day preceding the making of the receiving order. He had explained the whole matter to Spalding and Hodge, Ltd., and they were perfectly satisfied of his *bona fides*. Asked to state his reasons for filing the petition, the debtor said he met with a series of disappointments on the 3rd February last. In the first instance his bankers took £250 from the current account to a special account. Then he had three engagements to meet on the Friday, and there appeared to be a general unwillingness on the part of friends to assist him in the matter. On the other hand, he was unwilling to plead vigorously and to press his friends unduly for assistance, but was content to take the first "No" for an answer. On that night, after the clerks had gone, he considered the position very seriously, and came to the conclusion that the only step he could creditably take in order to meet the difficulties was to file a petition in bankruptcy. Neither his clerk or his solicitor knew of his intention to take that step until it had been taken. In reply to further questions, the debtor said he was trustee under the wills of two persons, and parts of the estates were invested in the business. They were so invested before he became the trustee, and the amounts had since been reduced. Authority was given under both wills for the investments to remain in the business. Asked as to his drawings for the business for household and personal needs, the debtor said they had increased from £459 in 1893 to £933 in 1896-7. He had to provide for special expenses during the latter years. The whole of the books of account had been handed over to the trustee. This was his first failure or the first arrangement with creditors of any kind whatever. Mr. A. W. Brooks was also examined by the assistant receiver. He stated that he had heard the evidence of his brother and agreed with it in every particular. He personally knew nothing whatever of the accommodation bill transactions, because he had nothing to

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E. J. WRIGHT and CO., Ltd.

Registered with a capital of £12,000, in £1 shares, to carry on the business of stationers, printers, stereotypers, engravers, die sinkers, envelope manufacturers, typefounders, picture machine makers, etc. The subscribers are to appoint the first directors. Remuneration as the company may fix.

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Registered with a capital of £55,000 in £1 shares, to acquire by purchase or otherwise all the copyright, goodwill, and interest in the newspaper known as *La Cote de Principaux Marches Financiers* and the publication known as the *Annuaires Français des Mines d'Or*, to print and publish the same, and to carry on in all or any of their respective branches the businesses of typefounders, ink manufacturers, printers and publishers, booksellers and stationers, envelope makers, papermakers, lithographers, photographic printers, photolithographers, engravers, electrotypers, die sinkers, bookbinders, advertisement agents: and as manufacturers of such plant, machinery, and apparatus as may be considered necessary or convenient for the purposes of the company. The signatories are:—E. H. Messeder, 18, Sandbrook-road, Stoke Newington; J. J. Fleming, 2, Beckford-villas, Leyton; H. A. Herbert, 76, Brixton-hill, S.W.; M. O. Smith, Gresham House, Old Broad-street, E.C.; F. Cook, 53, Greyhound-road, Kensal-rise, W.; T. E. Potts, 20, Upton-terrace, Forest-gate, E.; D. W. Money, Denmark-hill, S.E. The first directors—of whom there shall be not less than three nor more than seven—are A. Weiss, G. Elias, and J. Gleize. Qualification, £200. Remuneration, 20 per cent. of the net profits, divisible.

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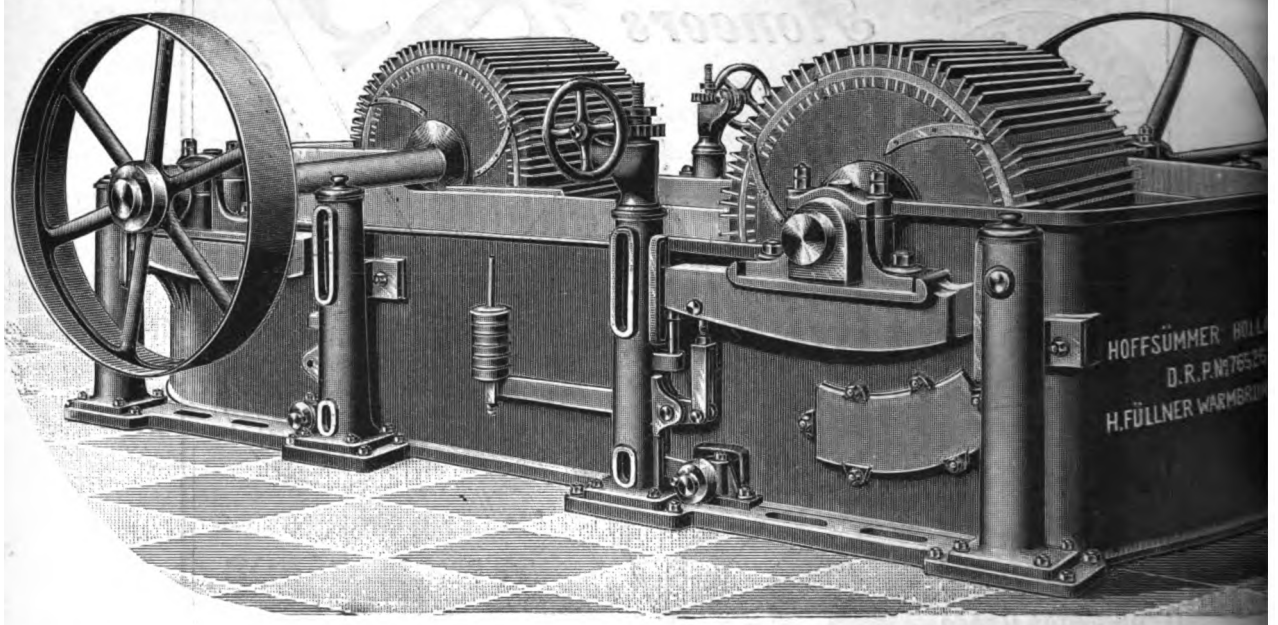

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The World's Paper Trade Review

A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 15. LONDON: APRIL 15, 1898. EVERY FRIDAY. PRICE SIXPENCE.

The Press Rolls.

The successful and economical running of a paper machine can only be satisfactorily accomplished when its various sections are working smoothly and in a state of thorough efficiency. Of course, a statement of this kind appears to be only a truism, which might at first sight be regarded as perfectly unnecessary, because its truth is so obvious.

But in spite of this, the principle of keeping every part of a machine in the best possible working order is not always adhered to by any means, for it must be admitted that even when some portion of the machine shows signs of wanting attention, the machine is kept running as usual until the deterioration in paper, or the wear and tear of that particular section has reached a stage when it is not possible to go on any longer without proper repairs and renewals.

In many ways, however, this policy of running a thing off its legs, so to speak, is rather a poor one, and can hardly pay in the long run. Probably to compensate for, or counteract the evils caused by keeping the machine going, till necessity forces a stop, the machine tender must run slower, overdry the sheet or make a larger percentage of broken, thereby increasing the cost of production in more ways than one. If it were possible to add up the expenses incurred by such defects, it might then be proved that the cost of stopping the machine and keeping it standing while the errors in some part were being amended would in many cases be exceeded.

These remarks apply with particular emphasis to the press rolls on the paper machine.

Owing to the loss of time which is entailed when these rolls are removed for the purpose of renovating and regrinding, especially in small mills where the machinery is being run to its utmost limits, and possibly no spare rolls are kept in stock, there is a general tendency to follow out this plan.

It is obvious, having regard to the highly important functions of the press rolls, that they should always be kept in a thoroughly good condition. So many other sections of the machine, even when they themselves are correct, are affected by the state of the wet web of paper leaving the press rolls, that it is not possible to obtain satisfactory results from ill-kept and unevenly worn rolls.

The work of the press rolls is two-fold. In the first place the excessive moisture left in the web after it has passed the suction boxes under the wire has to be reduced to the smallest possible quantity, consistent with the fact that too much pressure must be avoided in order to prevent "crushing" of the sheet. In the second place, a simultaneous duty is effected by the press rolls in the requisite "felting" or compressing of the fibres to the extent demanded by the quality of the paper being produced.

When the rolls have been treated in the grinding machine by the engineers, so that they show a perfect fit along their line of contact in any position, it is only necessary for the machine tender to regulate the pressure on the ends according to the running of the paper. With well-screened pulp properly strained before the wire is reached, the press rolls may be expected to work satisfactorily.

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The completeness with which the rolls perform the duty of removing excessive moisture from the wet paper should be as great as possible, because in the event of the latter being too moist, the heat of the drying cylinder may not be sufficient to bring the sheet to its proper condition. That is to say, if the cylinders, heated as they usually are by the exhaust steam from the engine which drives the paper machine, require a little live steam in order to be heated above the average temperature, the cost of drying the paper is increased in a like proportion. If the press rolls are working correctly, then the paper should pass from them in such a state of dryness that the heat developed by the exhaust steam should be ample to finish off the drying process.

Thus, from one point of view, the paper can be dried for nothing, whereas if the required amount of water cannot be removed by the press rolls, additional heat from an outside source may be necessary to assist the cylinders in finishing what the rolls should have done.

The amount of moisture taken out of the paper varies in different mills, according to the class of paper, speed, condition of felts, and other circumstances. Some mills claim to press the paper to such an extent that it only contains 50 per cent. of water. This is probably rather too low a figure, and if the sheet contains 60 to 70 per cent. of moisture and 40 to 30 per cent. of dry material when it goes on to the second felt or the first drying cylinder, it is more in accordance with the general practice of good running.

In cases where more than one set of press rolls is employed on a machine, the percentage of water may show a lower figure, but 60 to 70 per cent. is a good average, and any attempt to overdo this work of removing moisture beyond a fair amount usually wears out the felts, or makes them dirty very quickly, besides tending to crush the paper and weaken it. Another constant source of worry with press rolls which have been allowed to run for a long period without regrinding, is the existence of damp spots in the dry paper. It is the object of every papermaker to run the paper so that it is not overdried when it reaches the calenders. With thin papers made from cheap pulps, on fast running machines it is not possible to avoid overdrying, even when press rolls, cylinders, and all the other parts are in the best condition. This is mainly due to the existence of uneven patches in the wet paper caused by overlapping fibres, or by the presence of thicker pieces of fibre and pulp in the wet paper. When these wet patches get on to the cylinders it is necessary to dry them out. Thus the temperature at which the sheet is dried is regulated, not by the average condition of the wet paper taken as a whole, but by the existence of these patches. If these are not dried, the paper suffers in appearance and quality.

This fault is increased and exaggerated materially when the press rolls have become untrue, and then the amount of over-drying necessary to counteract these defects is a serious matter. The dried paper so treated is always somewhat brittle, and the sheet never exhibits those tenacious qualities so desirable in a well made, properly dried paper.

Even with rolls in the best order this evil is apparent, but the close contact between them usually ensures that thickened patches or pieces of fibre which have succeeded in passing the strainer plates are pressed out and flattened more than would be possible with rolls a little out of truth, with the result that the heat in the drying cylinders may be kept a trifle lower.

It would be preferable under these circumstances to grind the press rolls of any machine at stated intervals, unless a thorough examination of the line of contact showed that their condition was all that could be desired. The fact that imperfections in the earlier stages of the progress of the paper from the strainers to the reelers at the further end cannot be effectively removed at later stages is quite sufficient to show the advisability of such a course.

Vegetable Parchment Manufacture.

In the manufacture of vegetable parchment paper, as the web or paper comes out of the dilute sulphuric acid or water it is passed through, the acid adheres to or exists on the surface, as a sort of slime, and there is always a liability of its not being properly removed, together with the necessity of the employment of a large amount of apparatus or means of washing it free from the acid.

According to an invention recently patented by Messrs. Rigby, Sweetapple and Clarke, these objections are obviated by effective removal by means of brushes or scrubbers or rubber, or other equivalent material, which act upon the surface of the web, and so positively, or mechanically, remove the acid surface, or so disturb it as to enable the complete removal to be effected readily by a comparatively small quantity of water or water jets.

In some cases the brushes or scrubbers are of rubber, the active surface or part of which is in the form of ribs, and this may be mounted on a suitable support or backing of wood or other suitable material; while their movement is transversely to the direction of movement of the web, the action being performed by cranks, screws, or other suitable motion. Also, in some cases, the patentees construct and adapt the brushes or scrubbers to eject water in jets into the paper or web surface, so that a combined mechanical or positive and water washing action is provided. In such cases, the scrubbers or brushes may be made hollow, with holes or nozzles between or about the rubber, or like ribs, webs, or active parts of the brush or scrubber.

By the removal of all the acid from the web or paper, the weakening or breaking of the paper, due to the presence of acid—however dilute or weak—which otherwise exists, or takes place, is obviated.

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British Imports of Foreign Paper.

UNPRINTED.

COUNTRY.	MARCH.			JAN.-MARCH.		
	1896.	1897.	1898.	1896.	1897.	1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Sweden	38,585	45,847	45,628	120,773	121,967	124,523
Germany...	39,087	41,934	30,908	125,814	112,313	94,117
Holland	39,824	58,878	39,225	145,112	137,679	117,097
Belgium	19,733	24,019	18,770	59,399	60,502	56,209
Various	56,425	82,672	128,805	162,093	226,129	374,722
TOTALS	193,654	253,350	263,336	613,191	658,590	766,668
VALUE.	£	£	£	£	£	£
Sweden	31,478	32,137	34,312	95,284	84,196	93,602
Germany...	35,667	41,160	28,004	115,186	107,392	85,907
Holland	33,226	44,909	38,090	109,256	111,848	105,466
Belgium	24,867	26,972	23,476	77,288	70,792	70,279
Various	65,196	68,135	102,003	182,498	192,773	293,758
TOTALS	£190,434	£213,313	£225,885	£579,512	£567,001	£649,012

PRINTED.

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Germany...	796	368	968	2,041	1,927	3,326
Holland	1,761	1,265	1,376	4,324	4,728	3,749
Belgium	4,066	4,662	1,630	8,579	11,231	9,561
France	864	1,017	993	2,230	3,045	2,937
Various	931	1,087	2,933	2,874	4,014	7,336
TOTALS	8,418	8,399	7,900	20,048	24,945	26,909
VALUE.	£	£	£	£	£	£
Germany...	2,423	1,201	2,721	6,564	6,254	8,812
Holland	5,649	5,446	6,076	14,766	15,044	15,604
Belgium	11,725	12,960	4,672	23,059	31,464	26,688
France	5,046	5,587	4,917	12,673	16,842	14,113
Various	2,532	3,040	5,528	8,919	9,984	15,715
TOTALS	£27,375	£28,234	£23,914	£65,981	£79,588	£80,932

STRAW, MILL, & WOOD PULP BOARDS.

Quantity—cwts. ...	124,008	203,159	163,984	363,312	354,259	436,733
Value	£42,481	£69,738	£62,061	£125,084	£125,644	£161,783

TOTALS.

March	1898	435,220 cwts	£312,860	Jan.-March	1898	1,230,310 cwts	£891,727
,,	1897	464,908 ,,	311,285	,,	1897	1,037,794 ,,	772,233
,,	1896	326,080 ,,	260,290	,,	1896	996,551 ,,	770,577

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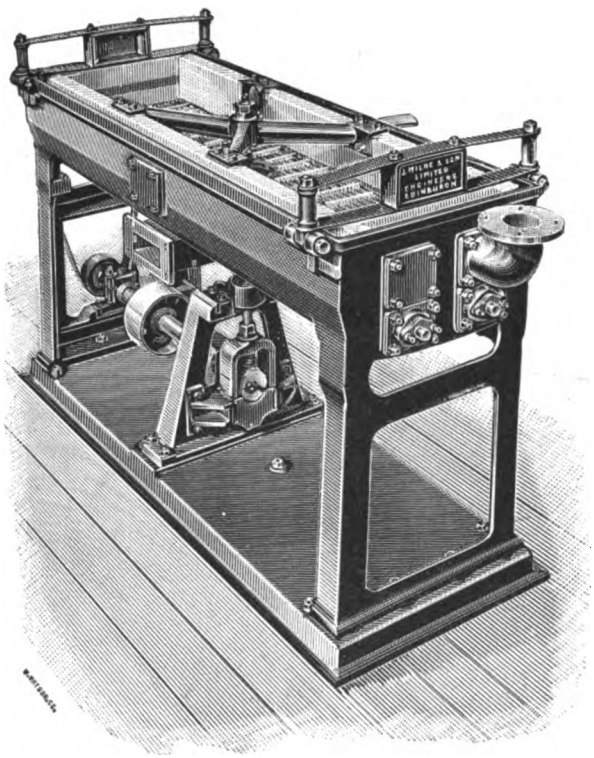

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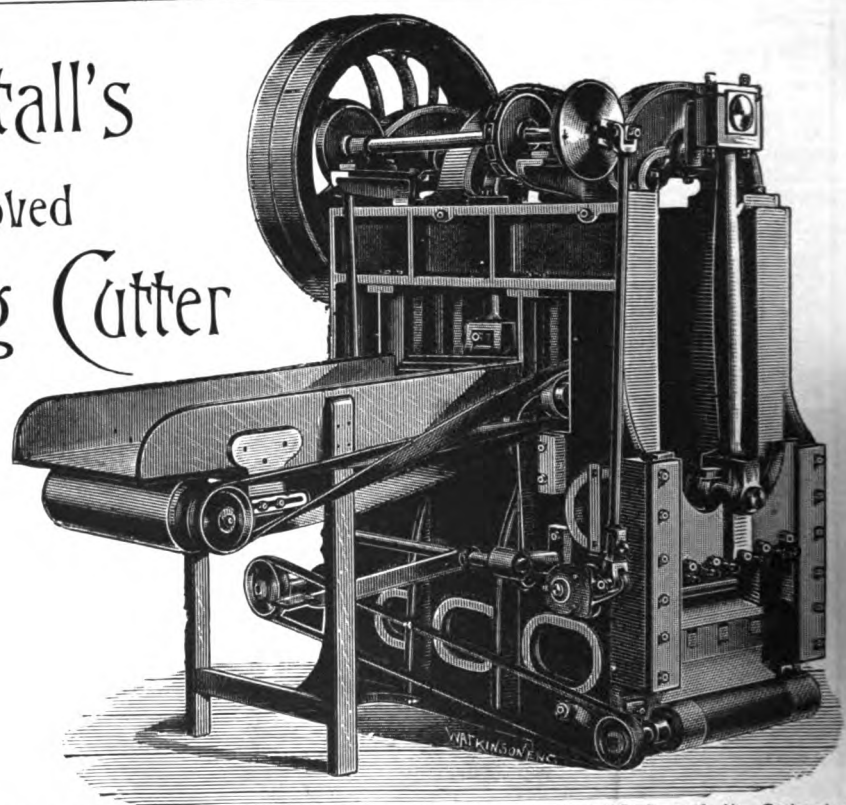

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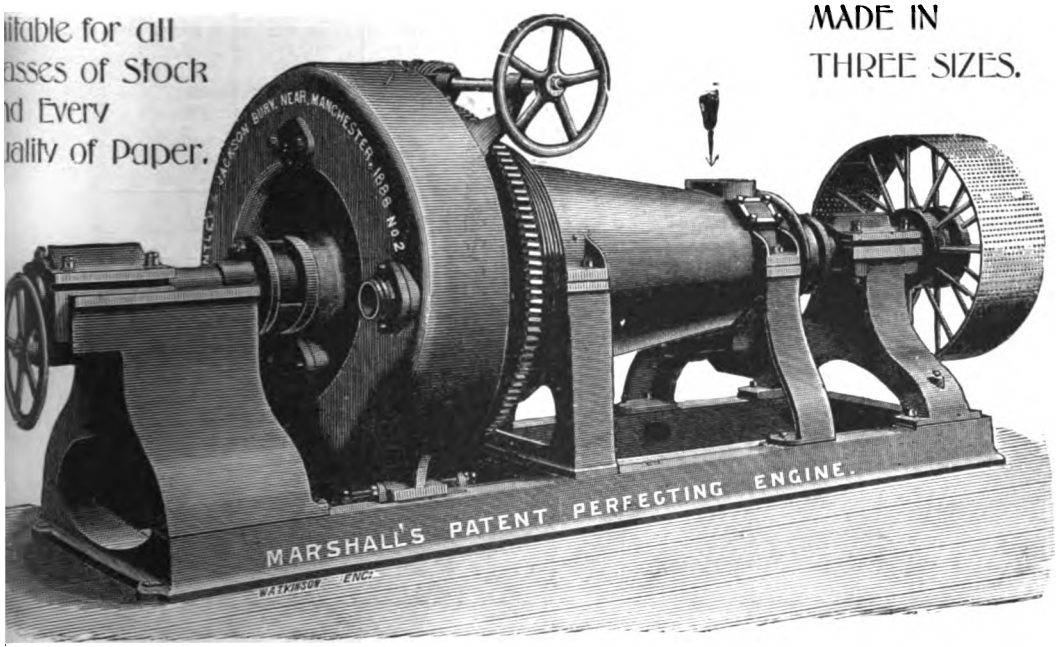

This Engine will produce a Better Finished, Stronger, and More Even Sheet of Paper from the same Materials than can be produced by any other Mechanical Process, and at the same time will REDUCE the TIME and POWER Required for Beating.

OBURN-TAYLOR Machine.

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N APPLICATION.

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Exports of British Paper

PRINTINGS AND WRITINGS.

COUNTRY.	MARCH. 1896.	MARCH. 1897.	MARCH. 1898.	JAN.-MARCH. 1896.	JAN.-MARCH. 1897.	JAN.-MARCH. 1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	3,902	4,071	4,488	12,911	9,377	10,163
U. States	1,096	859	571	2,827	2,680	3,519
S. Africa	6,361	6,991	4,800	17,708	18,150	13,889
E. Indies	5,837	4,979	6,232	17,650	14,123	18,080
Australasia	37,777	31,158	42,533	90,029	85,661	90,311
B. N. America	1,372	1,652	1,226	3,397	4,103	2,542
Various	11,848	11,822	14,544	35,432	30,498	36,996
TOTALS	68,153	61,532	74,427	180,954	164,592	175,140
VALUE	£	£	£	£	£	£
France	6,423	6,176	7,659	20,672	15,401	17,827
U. States	2,369	2,125	1,128	6,190	6,906	5,073
S. Africa	9,897	10,214	7,129	28,543	27,591	20,708
E. Indies	10,694	9,481	11,064	30,832	26,348	30,771
Australasia	44,891	35,303	41,341	108,157	103,400	100,624
B. N. America	2,343	2,521	2,101	5,818	6,729	5,022
Various	22,368	20,829	25,251	65,440	57,512	63,099
TOTALS	£98,985	£87,679	£95,673	£265,652	£243,977	£243,115

OTHER KINDS.

(Including Hangings).

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	1,021	1,337	560	3,277	2,797	2,325
U. States	679	1,568	764	3,142	3,068	1,671
S. Africa	4,271	4,330	4,956	13,386	11,817	11,962
E. Indies	1,253	925	2,343	4,403	2,847	6,257
Australasia	8,056	10,497	7,710	27,108	26,032	20,816
B. N. America	512	334	220	1,088	676	846
Various	3,837	5,319	5,581	10,976	13,220	13,456
TOTALS	19,629	24,310	22,134	63,380	60,457	57,333
VALUE.	£	£	£	£	£	£
France	4,250	4,560	2,474	10,670	10,564	7,880
U. States	3,014	5,535	2,292	11,294	10,815	5,465
S. Africa	3,983	3,997	4,199	12,900	11,207	10,889
E. Indies	1,895	1,692	2,501	6,237	4,463	7,200
Australasia	7,490	9,074	7,368	24,867	23,169	20,624
B. N. America	1,118	804	583	2,301	1,604	2,027
Various	7,599	7,803	9,158	21,673	21,558	22,318
TOTALS	£29,349	£33,165	£28,575	£89,942	£83,380	£76,403

TOTALS (Including Hangings):

1898	105,493 cwts	£146,488	Jan.-Mar.	1898	256,469 cwts	£382,611
1897	93,639 ,,	140,417	,,	1897	247,557 ,,	382,130
1896	95,266 ,,	146,478	,,	1896	265,607 ,,	408,363

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Exports of British Paper

PRINTINGS AND WRITINGS.

COUNTRY.	MARCH.			JAN.-MARCH.		
	1896.	1897.	1898.	1896.	1897.	1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
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Sulphite Waste Lye.

Dr. H. Seidel and L. Hanak treat the subject of waste lye from sulphite cellulose in a thoroughly practical way in the "Mittheilungen des K. K. Technologischen Gewerbe Museums, in Wien." Having shown that the organic matter, containing sulphur, in the waste lye can be obtained in several ways, and that these show uniform reaction and a similar amount of sulphur in each batch, lyes of several different boilings at the Silesian Cellulose Mill have since been tested, and prove the accuracy of the statements already published. All the products obtained strongly reduce Fehling's solution, are soluble in water, show an acid reaction, are insoluble in absolute alcohol and concentrated solutions of common salt, and show almost the same percentage of ash. They also give precipitates with phenyl hydrozin, show the reaction with a naphthal and sulphuric acid, and give the same tints. They form difficult soluble precipitates with lead acetate or barium chloride, but it is impossible to precipitate them completely with the two latter reagents. The percentage of sulphur was always a little less than in the fresh liquor, viz., about eight per cent., but corresponded within very narrow limits for each batch of waste lye, thus again showing the identity of these organic products, and proving that the percentage of sulphur organically combined depends upon the way in which the boiling is conducted.

Dr. H. Seidel and L. Hanak then tried to obtain the matter representing the principal amount of the organic substances as pure as possible. For this purpose a very dilute solution of waste sulphite lye was heated to boiling, acidified with hydrochloric acid, and a solution of barium chloride was added, in the quantity calculated as sufficient for the amount of sulphur determined in the organic matter to precipitate the whole of the sulphur acids in the solution. In the liquid that passed through the filter neither barium chloride nor sulphuric acid caused any cloudiness. It may here be mentioned that the barium salt of the sulphur-containing organic matter, described later on, is soluble in such a dilute solution.

After evaporating down, alcohol was added, and a precipitate obtained which the authors call gum, free from sulphurous acid. This substance contains 13·32 per cent. of sulphate ash, which was shown to be calcium sulphate by a qualitative examination, giving a percentage of calcium oxide (CaO) of 5·64. The quantitative test with ammonium oxalate gives 5·66 per cent. of CaO and 8·44 per cent. of sulphur. The substance obtained shows all the above-mentioned reactions. They then endeavoured to substitute the calcium in the ash by other metals. This was done successfully with barium, and less successfully with zinc.

15 grammes of gum free from sulphurous acid were dissolved in 150 c.m. of water, and a solution of 9 grammes of barium chloride in crystals added, and the whole digested. Alcohol was then added, and the brown grainy sediment obtained decanted with alcohol, dried first in a vacuum, and carefully finished in a drying oven. The substance then obtained was burnt to ash, and the ash treated with sulphuric acid. On analysing this ash extremely small quantities of calcium sulphate were found, besides the principal amount of barium sulphate.

In order to eliminate the faults of this method of ascertaining the barium by the ash, the barium was ascertained directly by the method of Caruis in the melting tube, in which the small quantities of soluble sulphate do not affect the result. The mean of these analyses gave 14·49 per cent. of barium oxide and 7·77 per cent. of sulphur. The substance contains no chlorides.

In the method by zinc, 5 grammes of the gum free from sulphurous acid were dissolved in 100 c.m. water, and a solution of 2 grammes of zinc chloride added. The gum was precipitated by alcohol, and the ash of it, on analysis, gave 6·95 per cent. of zinc oxide and 7·86 per cent. of sulphur.

By comparing these results it will be seen that the quantities of calcium, barium, and zinc are combined with the sulphur, containing organic matter in almost molecular proportions, namely, 153 : 71 : 56. From these the percentages ought to be respectively 14·49, 6·72, 5·30, the results of the analyses being 14·49, 6·95, and 5·64 per cent. From these facts the conclusion can be drawn that the principal amount of the organic substance in the waste lye is a definite calcium salt, due to the influence of the calcium bi-sulphite on the non-cellulose constituents of the wood (lignin). This opinion is further supported on ascertaining the amount of sulphur in the ash free organic substance, which can be calculated from the amount of sulphur in the calcium or barium salt. In this way 9·04 per cent. was obtained from the barium salt, 8·44 from the zinc salt, and 8·94 from the calcium salt, giving a mean of 8·8 per cent. of sulphur.

After these experiments it was endeavoured to obtain from these salts or salt-like combinations the ash-free substances on one hand, and to ascertain on the other in what manner the sulphur is combined, and also as to whether the metal atoms are really chemically combined through the sulphur, as may be supposed from the up to now published chemical experiments with sulphite lye. To obtain the organic matter free from mineral ash is rather difficult. The ordinary methods completely fail. It is true that from the original sulphite lye a brown flecky precipitate is caused by ammonium carbonate, consisting mainly of calcium carbonate, but the principal part of the calcium salt is not precipitated. The filtrate from this gives a precipitate with alcohol containing about five per cent. of calcium oxide, and may therefore be regarded as the calcium salt of the organic substance. The solution of this latter precipitate is not affected by ammonium car-

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bonate, thus proving that the precipitate obtained from the lye by this reagent is due to the small amount of calcium combined with sulphuric and sulphurous acids, and not that combined with the organic substance.

A portion of the lye was evaporated to 28 degrees Bé, in a vacuum, and a precipitate was obtained on adding concentrated hydrochloric acid. This precipitate was washed with HCl, dissolved in water, reprecipitated and dried, but on analysis this was found to still contain 3·9 per cent. of calcium oxide.

A product practically free from ash was at last obtained in the following manner:—To 10 grammes of the barium salt, the calculated quantity of dilute sulphuric acid was added, and the whole dissolved in excess of water. A small amount of sediment, consisting of barium sulphate, was filtered off, and the solution obtained was allowed to stand for several days at a temperature of about 40 degrees C. A white sediment of barium sulphate settled down, which was filtered off, and this was repeated several times during about three weeks, until no further sediment was obtained. In the resulting solution no trace of barium or sulphuric acid was shown by the ordinary analytical methods. The solution was then evaporated to a syrupy consistency, and on adding alcohol no precipitate was obtained, showing that the peculiarity of being insoluble in alcohol only applies to the salts, and not to the free organic substance. From this watery alcoholic solution a brown flakey precipitate weighing about three grammes was obtained by means of ether, and this was carefully dried.

The substance thus obtained is a brown, glossy, extremely hygroscopic powder, soluble in water. The solution reacts acid, reduces Fehling's solution, and gives with phenyl-hydrozin a yellowish-white precipitate. Barium chloride and lead acetate produce soluble precipitates. The ash, estimated as barium oxide, amounts to 1·26 per cent. The substance is easily decomposed, and burns freely.

The elementary analysis gave the following results, calculated as ash free substance:—

1. C., 53·54 per cent. H. 4·96 per cent.
2. C., 53·85 ,, H. 5·23 ,,
3. C., 53·85 ,, H. 5·47 ,,

The percentage of sulphur was 8·80, which very closely corresponds with the amount of sulphur calculated from the calcium, barium and zinc salts.

The average composition of the ash—free sulphur—containing organic substance obtained from Silesian sulphite lye is therefore:—

C. 53·69 per cent.
H. 5·22 ,,
S. 8·80 ,,
O. 32·29 ,,

The values ascertained for a lye from lower Austria were:—

C. 56·27 per cent.
H. 5·87 ,,
S. 5·52 ,,
O. 32·24 ,,

The amount of sulphur in the organic substance is therefore shown to be considerably higher in the Silesian than in the Austrian lye, whilst the amount of carbon and hydrogen is less.

The experimentors do not put forth a formula for the substance, which in view of the previous experiments seems to contain hydrogen atoms displacable by metals. They hope, however, to get more knowledge by the study of the sodium and ammonium salts, and from the "free acid" (obtained from the calcium salt by means of oxalic acid) the production of which in a pure state has not yet been done.

The "free acid" obtained from the barium salt is not looked upon as pure, on account of its easy oxidation, the trouble of obtaining it, the impossibility of crystallising it, and its hygroscopic nature—in fact, it is a substance exactly the same as the ash free organic substance obtained from the sulphite lye.

It may be mentioned that from the salts obtained to now, a molecular weight of 920—950 can be calculated. A striking feature also is the proportion of the sulphur to the metals. To one atom of metal a proportion of 2·75 atoms of sulphur exist. If the metals were combined in the form of normal sulphosalts there would be only 6·06 per cent. of sulphur in the barium salt, 6·26 per cent. in the zinc salt, and 6·44 per cent. in the calcium salt, so that there exists in the substance a percentage of 1·6—2 of sulphur which ought to be otherwise combined, and which is possibly present in the form of free sulphur, but no positive opinion can yet be formed.

In the following is described the experiments made to ascertain the manner of combination of the sulphur:—

On evaporating with caustic potash a black mass was obtained, which gave off large quantities of sulphur dioxide on treating with acids. The substance is partly decomposed by this evaporation, and the decomposition is complete when fused with caustic potash, and the amount of sulphur dioxide contained can be calculated.

Two grammes of the gum precipitated by alcohol were heated with alcohol in a combustion tube up to 120 degrees C.; only small amounts of sulphuric acid were obtained.

By heating the same substance with dilute hydrochloric acid (1 : 10) in the combustion tube to 180 degrees C. for 18 hours, a black mass almost insoluble in water was obtained. The solution of this mass contained sulphuric acid in an amount corresponding to 2·08 per cent. of sulphur. Consequently 6 per cent. of sulphur could not be obtained as sulphuric acid. With a lower temperature and less time smaller amounts of sulphuric acid are obtained.

The sulphite lye is easily oxidised by nitrogen pentoxide, and when boiled the result is a light yellow liquid, containing almost the entire sulphur as sulphuric acid.

Sulphite lye, on exposure to air for several months, gets lighter in hue, deposits calcium sulphate; the dry residue of the lye contains only 6·72 per cent. of sulphur, and the

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lye itself 0·067 per cent. of sulphur as sulphuric acid. An oxidisation of the organic matter in the lye therefore takes place.

Sodium amalgam does not react on the lye, neither in alkaline nor acid solution. Remarkable appearances were obtained, however, by zinc and hydrochloric acid. The experiment was performed as follows: In a spherical bottle a mixture of 100 c.m. of sulphite lye, from which all SO_2 had been driven by boiling with a little hydrochloric acid, and 20 c.m. of concentrated hydrochloric acid were added in drops to 10 grammes of the purest zinc dust. The gas coming off was conducted in an atmosphere of carbon dioxide, free from sulphuretted hydrogen, into a vessel containing an alcoholic sublimate solution. A white precipitate was formed, which, on qualitative analysis, proved to contain mercury, chlorine, carbon and sulphur. The gas has a loathsome smell, somewhat resembling mercaptan, but in a solution of copper sulphate the characteristic yellow precipitate of mercaptan was not obtained, but a black sediment was formed. From a quantitative test with 20 c.m. sulphite lye, 0·055 gramme of Cu_2S was obtained from this, against 0·005 gramme obtained in a simple trial. A small amount of a sulphur combination is therefore decomposed on treating with zinc and hydrochloric acid.

When the evolved gas is led into soda lye a yellow solution is obtained, giving an intense reaction with sodium nitroprusside, and producing a black precipitate with copper, lead and silver salts. This gas has not been further analysed, as the experiment was carried out to see if a larger quantity of sulphur can be obtained, and such is not the case.

In this light yellow solution, which gets darker on exposure to the air, a light yellow gum-like precipitate is obtained with alcohol, which contains, when dry, 7·01 per cent. of sulphur. On distilling in steam a milky liquid is obtained, which shows the same properties as the gas in question. Furfurol is therefore present. The quantities obtained do not show any proportion to the lye used. It is therefore evident that all means used till now to obtain the sulphur have failed.

As has already been stated, nitrogen pentoxide acts energetically upon the organic matter in the waste sulphite lye, oxidising the sulphur to sulphuric acid, and a considerable part of the carbon and hydrogen to carbon dioxide and water. From the oxidised liquid a quantity of acid matters can be extracted by ether, amongst which oxalic acid can be recognised. After evaporating the ether the yellow, greasy mass is precipitated with calcium chloride, and on decomposing the residue white crystals of oxalic acid, having a m.p. of 100 degrees C., were obtained. The remaining acids were not analysed.

By adding the pulverised organic substance obtained from sulphite lye to ice cold mixture of saltpetre and sulphuric acid, a rapid reaction takes place. A yellow amorphous mass is obtained, which contains nitrogen, and which is consequently not only a product of oxidisation. This mass is soluble in most solvents, but is not crystallisable. It does not run in a flame.

The halogens also act energetically upon sulphite lye. By conducting chlorine into it, the lye becomes of a blood-red colour, and a yellow amorphous precipitate is obtained. This precipitate decomposes in the drying oven, giving off hydrochlorine acid, but it can be dried without decomposition in a vacuum.

After the oxidisation with nitrogen pentoxide chlorine and sulphur could be ascertained in considerable amounts in the melting tube. The substance is soluble in alcohol and water, reduces Fehling's solution, and gives a brown precipitate with phenyl-hydrazin. It seems to be a substitution product of the organic substance of the sulphite lye.

A remarkable occurrence in the sulphite cellulose manufacture is the product of molecular sulphur as a by-product. In the wooden tubes through which the waste sulphite lye is discharged, a greyish white crystalline sediment settles down, consisting mainly of calcium sulphate, originating from the oxidisation of the calcium bi-sulphite, which contains free sulphur. On analysis this sediment shows the following composition :—

Water	6·28	per cent.
Calcium sulphite ...	87·41	,,
Ferric oxide and clay	0·13	,,
Silicic acid	0·28	,,
Sulphur	5·75	,,
	99·85	

The quantity of sulphur was ascertained by the extraction of the dried substance with bisulphide of carbon, in the Soxlet apparatus, distillation of the solvent and weighing the residue. The fact of this extract being pure sulphur was proved by the melting point and by burning on platinum, and also by fusing with caustic soda and the sodium nitroprusside reaction. It is true that this quantity of sulphur is too small to claim technical interest, but its appearance is very interesting from a theoretical point of view. It proves that the sulphurous acid not only gets oxidised in the boiler, but that a part of it undergoes a reduction. The way in which this remarkable reduction takes place can not be accounted for.

In conclusion, the results of testing a sulphite lye from the cellulose mill at Unterkochen, Württemberg, is as follows :—

The lye has at 17·5 degrees C. a density of 1·057. It has a light brown colour, smells strongly resinous and of sulphur dioxide. On adding common salt light brown flakes occur; with alcohol a light gum is precipitated. On boiling, the lye gets turbid and calcium monosulphite is thrown down. The dry residue from 100 c.m. amounts to 11·21 per cent., the ash to 14·44 per cent., and the sulphate residue 20·07 per cent. of the dry residue.

These figures are considerably higher than

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those obtained from other lyes. The whole sulphur amounts to 8·75 per cent. of the dry residue. Of this, 1·56 per cent. is present as sulphite, 0·62 per cent. as sulphate, and 6·57 per cent. combined with organic matter, which is almost similar to the results obtained from the Silesian lye. In the lye itself is 0·6388 per cent. total sulphur dioxide, 0·2884 per cent. being free SO_2.

The sulphate ash contains the following:—

Silicic acid ...	...Traces.
Ferric oxide and clay	0·93 per cent.
Calcium oxide... ..	37·50 ,,
Magnesia	16·20 ,,
Sulphuric acid ...	45·40 ,,

Omitting the large quantity of SO_2, this waste lye is consequently similar to the Silesian lye in its composition, and therefore shows similar properties.

The experimentors are continuing their experiments with the waste lye, and hope to soon report upon the technical realisation of this refuse.

British Imports & Exports of Rags.

The imports of rags during last month and and also for the three months of this year show a decline compared with the corresponding periods of last year. The following are the

TOTAL IMPORTS.

March,	1898	1,925 tons	£18,541
,,	1897	2,069 ,,	21,135
,,	1896	2,630 ,,	22,543
Jan.-Mar.	1898	5,340 ,,	£51,098
,,	1897	6,686 ,,	66,917
,,	1896	6,086 ,,	57,023

In the exports of rags an improvement is shown, the quantity for last month and also for the first three months of this year showing an increase compared with last year.

TOTAL EXPORTS.

March,	1898	5,678 tons	£27,535
,,	1897	4,697 ,,	25,961
,,	1896	5,147 ,,	27,192
Jan.-Mar.	1898	14,263 ,,	£67,029
,,	1897	12,086 ,,	63,602
,,	1896	13,895 ,,	76,695

"THE WINDSOR MAGAZINE" (Ward, Lock and Co., Ltd.).—The current number of this enterprising monthly contains a further instalment of Max Pemberton's exciting serial "Kronstadt," profusely illustrated, and a continuation of the series of highly interesting stories entitled "Jennie Baxter Journalist," by Cottrell Hoe. An entertaining article, entitled "Some Circuit Customs," is contributed by Michael Moscow. "Travel Luxury on Land and Sea," by Frederick Talbot, will serve to enlighten stay-at-home folks considerably. "The War Office; its Work and Personnel," by A. Hilliard Atteridge, proves instructive reading. The contents also include several other stories of great interest.

British Imports of Wood Pulp.

The imports of wood pulp last month show a substantial advance compared with the corresponding months of the two previous years. An increase is also shown, comparing the first quarter of this year with the first three months of 1897. The following are the

TOTAL IMPORTS.

March,	1898	29,182 tons	£142,520
,,	1897	25,855 ,,	130,091
,,	1896	19,575 ,,	96,092
Jan.-Mar.,	1895	89,365 tons	£433,194
,,	1897	88,519 ,,	431,585
,,	1896	66,071 ,,	341,898

The supplies from Norway last month, and also for the three months of this year, are rather below the quantity imported during the corresponding periods of last year:—

FROM NORWAY.

March,	1898	18,891 tons	£76,433
,,	1897	19,367 ,,	84,125
,,	1896	14,413 ,,	63,223
Jan.-Mar.,	1898	54,673 tons	£221,529
,,	1897	66,693 ,,	269,590
,,	1896	49,319 ,,	224,267

There were received during March, 7,736 tons of chemical wood pulp, of the value of £48,443, and during the first three months of this year, 19,832 tons, of the value of £132,185. Mechanical pulp was received during March to the extent of 11,155 tons, of the value of £27,990, and during Jan.-March, 34,841 tons, of the value of £89,344.

During the present year there has been a steady increase in the imports of wood pulp from "other countries," including Sweden.

FROM OTHER COUNTRIES.

March,	1898	10,291 tons	£142,520
,,	1897	6,488 ,,	130,091
,,	1896	5,1b2 ,,	96,092
Jan.-Mar.,	1898	34,692 tons	£433,194
,,	1897	21,826 ,,	431,585
,,	1896	16,752 ,,	341,898

Chemical wood pulp was imported from "other countries" to the extent of 5,556 tons, of the value of £44,802, during March, and 15,657 tons, of the value of £124,218, during the first three months of this year. Mechanical was imported to the extent of 4,734 tons, of the value of £21,285, during March, and 19,035 tons, of the value of £87,447, during Jan.-March.

CHANCE AND HUNT, LTD.—This company has been registered with a nominal capital of £280,000 in £10 shares, to take over the business and undertaking of the Oldbury Alkali Co., Ltd., also the plant and buildings and business of William Hunt and Sons, and to carry on the manufacture of alkali, etc. The first directors are Messrs. H. Chance, A. M. Chance, A. L. Chance, G. F. Chance, A. M. Chance, jun., E. Hunt, and E. J. Hunt. Qualification, £2,000.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

SCANDINAVIAN wood pulp manufacturers report a fairly good demand, particularly for moist pulp.

GREAT BRITAIN imported 13,292 tons of chemical wood pulp, of the value of £93,245 during March; of this quantity 7,736 tons, of the value of £48,443 were supplied by Norway, and 5,556 tons, of the value of £44,802, from other countries.

MECHANICAL WOOD PULP was received at British ports during last month to the extent of 15,890 tons, of the value of £49,275. Norway supplied 11,155 tons, of the value of £27,990, and other countries 4,735 tons, of the value of £21,285.

ACCORDING to the official figures issued by the Board of Trade, the average price of chemical wood pulp received from Norway in January was £6 6s. 10d.; February, £7 19s. 6d.; and March, £6 5s. 2d. From other countries: In January, £7 14s. 8d.; February, £7 19s. 4d.; and in March, £8 1s. 3d.

WE have already referred to the very wide difference in the average price per ton of mechanical wood pulp from Norway and other countries, and we imagine that some mistake must have been made in the description of the goods and compilation by the official authorities. Take the supplies from Norway: The average price per ton in January was £2 13s. 9d.; in February, £2 9s. 9d.; and in March, £2 10s. 2d. From other countries: January, £5 3s. 9d.; February, £3 18s. 11d.; and in March, £4 9s. 10d.

THE official authorities have given a distinct classification of chemical and mechanical wood pulp imported, but judging from the average prices per ton, it is evident that to be of value particulars must be given as to whether the mechanical imported is in a wet or dry state. At the present time it looks as if mechanical pulp from Norway is about £2 10s. per ton, and from other countries £4 9d. per ton, an inference which is decidedly erroneous.

DURING the first three months of this year the British imports of chemical wood pulp amounted to 35,489 tons, of the value of £256,403; of this quantity Norway supplied 19,832 tons, of the value of £132,185, and other countries 15,657 tons, of the value of £124,218.

MECHANICAL WOOD PULP was imported during the first three months of this year to the quantity of 53,876 tons, of the value of £176,791. From Norway 34,841 tons, of the value of £89,344 were imported, and from other countries 19,035 tons, of the value of £87,447.

AMERICAN mechanical has been imported of late in fairly large quantities—the shipment of 2,200 tons from Bucksport, Me., landed at Manchester, was made by the Piscataquis Pulp and Paper Co., Enfield, Me.

FROM Canada reports are constantly being received of proposals to build new wood pulp mills. The Grand Falls Power and Boom Co. have asked the New Brunswick Government for a renewal of charter. It is proposed to build pulp mills and other works at Grand Falls, N.B.

THE Tourville Lumber Mills Co. are said to be considering the establishment of a large pulp and paper mill at Louisville, Que. The Government has been asked to dredge three miles of the river to give the necessary water.

A REGULAR steamship service has been established between Port Medway and Halifax, points on the Nova Scotia coast. It is expected that this service will materially aid in the development of the pulp industry of which Port Medway is bound to be the natural outlet. Last year the few vessels that visited Port Medway took away cargoes of pulp to the British market.

British Imports of Esparto.

The imports of Esparto last month were not quite so heavy as during the corresponding period of 1897. The three months' figures also show a small decline. The following are the

TOTAL IMPORTS.

March	1898	22,504 tons	£83,082
,,	1897	25,056 ,,	99,097
,,	1896	20,419 ,,	85,067
Jan.-Mar.,	1898	61,772 tons	£236,671
,,	1897	63,328 ,,	261,712
,,	1896	61,149 ,,	259,834

The supplies from Spain last month amounted to 6,891 tons of the value of £31,251 compared with 7,004 tons of the value of £36,074 for March, 1897. The three months' supplies reached 17,852 tons of the value of £87,606, compared with 21,221 tons of the value of £105,630 for the first quarter of 1897.

The imports from Algeria last month were 7,762 tons of the value of £27,007, compared with 8,759 tons of the value of £33,574; for the three months 24,852 tons of the value of £87,827, compared with 22,761 tons of the value of 87,069.

From other countries 7,851 tons of the value of £24,824 were received last month compared with 9,293 tons of the value of £29,549 for March last year. During the three months of this year 19,068 tons of the value of £61,238 were received, compared with 19,346 tons of the value of £69,013 for the corresponding period last year.

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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

DEVELOPING THE EXPORT TRADE IN AMERICAN PAPER.—We learn from a New York contemporary that Mr. Cambridge, a representative of the large English paper house of Spicer Bros., of London, has recently been in Boston seeing the agents of the large paper mills and making arrangements for supplying his house with American paper.

BRITISH ENQUIRIES FOR AMERICAN PAPER.—According to "American Trade," published by the National Association of Manufacturers, the following named firms have asked for samples and prices of printing and writing papers:—Oscar Schölzig, 9, New Broad-street, London, E.C.; Charles H. Davies, 79, Cambridge-street, Birmingham; Job Rufus Rogers, 9, Wood-street, Cardiff; and Morgan, Jenkins, 40-43, Waterloo-street, Swansea.

INCHICORE PAPER CO., LTD.—Registered in Ireland with a capital of £2,000 in £1 shares, to purchase the Killeen Paper Mills, at Killeen, County Dublin, and all utensils, stock-in-trade, etc., and to carry on the business of paper manufacturers and traders in paper in all its branches. Directors not less than three nor more than five. Registered office: Killeen Paper Mills, Inchicore, County Dublin.

VARIEGATED COLOURED PAPERS.—A correspondent writes: "In reference to the making of 'Variegated Coloured Papers' on front page of your last issue, and forming the subject of a patent by Mr. O. H. Stone, the method referred to was carried out at Stowford Mills, Devon, some years ago, by Messrs. Allen, in the production of their writing paper, called 'Mother-of-Pearl.' Two perforated pipes were placed across the machine wire and connected by rubber tubing with overhead cisterns holding the dye solutions, the shake motion of the wire producing the zig-zag or mottled appearance in the paper. Of course, any liquid dye colour could be used, and two, three, or more colours, as may be required.

INDIAN PAPER MILLS.—We are glad to learn that the principal Indian paper mills are now enjoying more prosperous times. They have, during the past year or two, owing to the famine, war, etc., felt the depression in trade. It appears that efforts have been made to produce a better class of paper, and also to manufacture on more economical lines. According to the *Statesman* (Calcutta), of March 13th, steady dealings are going on in the shares, those of the Imperial standing at 100-101, and Bengal 83 84. According to the paper quoted the Imperial shows indications of making about a lakh of rupees during the current six months, which at the current rate of exchange is about £6,000.

RE THE HULL CHEMICAL WOOD PULP CO., LTD.—A general meeting is called of the members of this company, to be held at the registered office, 52, Howarth's-buildings, Cross-street, Manchester, on May 10th, for the purpose of receiving the particulars as to the way in which the concern has been wound up and the property of the company disposed of. The liquidator is Mr. T. S. Sykes.

NORTHUMBRIAN CHEMICAL CO., LTD.—At a meeting of this company, held at the office of Messrs. William Milburn and Co., Queen-street, Newcastle-on-Tyne, it was resolved to voluntarily wind up the concern, and Mr. J. D. Milburn and Mr. A. Gemmell were appointed liquidators.

A STEEPLEJACK INJURED.—Whilst working on the Darwen Paper Mill chimney on Wednesday, last week, a steeplejack labourer, named Langham Booth, of Oldham, fell from a ladder 25-ft. on to the coping of a 2-ft. wall, and sustained very serious injury to his spine. He was removed to the Infirmary, where he is now doing as well as can be expected.

EXPORTS OF PAPER HANGINGS.—The following statistics show the exports of paper hangings from Great Britain:—

March,	1898	8,932 cwts.	£22,240
,,	1897	7,797 ,,	19,573
,,	1896	7,484 ,,	18,144
Jan.-Mar.,	1898	23,996 ,,	63,093
,,	1897	22,508 ,,	54,773
,,	1896	21,273 ,,	52,769

FOREIGN PAPER RE-EXPORTED.—The following statistics show the total re-exports of foreign paper from British ports:—

March,	1898	9,150 cwts.	£8,208
,,	1897	9,582 ,,	7,691
,,	1896	7,010 ,,	5,025
Jan.-Mar.,	1898	25,707 ,,	20,867
,,	1897	21,138 ,,	18,051
,,	1896	22,459 ,,	16,534

THE death is announced of Mr. Philip Carr, an old member of the New York paper trade. He was born in Ireland sixty years ago, and was taken when quite an infant to the States by his parents.

"THE STRAND MAGAZINE" (Geo. Newnes, Ltd.). — The April number of this popular magazine contains a very interesting article by Sir George Newnes, Bart., on "A Journey to Jerusalem," which is well illustrated, including views of Calvary, Gethsemane, and other spots. Grant Allen continues his instructive contributions on "Glimpses of Nature," and another popular feature of the magazine is "Miss Cayley's Adventures," also by Grant Allen. "From behind the Speaker's Chair," by Henry W. Lucy, "The Treasure of Nephron" by Eden Phillpotts, and "The Brotherhood of the Seven Kings" by L. T. Meade and Robert Eustace, number amongst the contents, also the "Portrait Gallery," dealing with the Queen of the Netherlands, Lord Breadalbane, William Hole, R.S.A., and "Lewis Carroll" (the late Charles Lutwidge Dodgson).

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GERMANY.

Germany supplies about 1,600 tons of chromos and engravings to Great Britain annually; the value, according to the latest returns, was 17·6 million marks. Gold, silver, and coloured surface papers are exported to Great Britain from Germany to the extent of over 2,000 tons annually; the year's value, according to the last return, was 8·7 million marks.

The reports issued by the Bavarian factory inspectors state that a large number of manufacturers urge the necessity of Sunday work, especially as it was found difficult at times to obtain sufficient water-power. Exceptions in some cases have been granted.

AUSTRIA.

Meeting of Papermakers.—The Bohemian papermakers recently held a meeting at the Prague Chamber of Commerce. Herr Rainmund Kubik, of Babentsch, complained that the red tape arrangement of the authorities had a bad effect on business. It was some time after he had erected a chemical pulp factory that he could get the necessary authorisation for opening it. Herr Emil Hirsch referred to the unsatisfactory railway rates, which interfered with the export trade. Herr Porak, of Moldaumuhl, pointed out that it was difficult to get concessions for the erection of industrial works in Austria. In Germany, and even in Russia, no similar difficulties existed. Herr Spiro mentioned that in consequence of pollution difficulties two works were already stopped, and that one of them had transferred its operations to Transylvania.

UNITED STATES.

Paper Mills Damaged by Floods.—Advices from Dayton, Ohio, state that the valley has been visited by the biggest flood in its history, and an immense amount of damage has been done. Communication is interrupted, railroad facilities have been cut off, and mails have been delayed. Nearly all the mills have been compelled to close, and the paper and allied trades have been damaged thousands of dollars. Among the losses are: Champion Coated Paper Company, 10,000 dols.; Beckett Paper Company, 10,000 dols.; Snyder Company, 500 dols.; Stilwell-Bierce and Smith-Vaile Company, 3,000 dols.; Dayton Globe Iron Company, 1,000 dols.; Hoover, Owen and Rentschler Company, 10,000 dols.; Nixon Paper Company, 3,000 dols., beside which there are numerous smaller losses.

Mr. S. J. Rose, of Messrs. S. J. Rose and Frank, paper and paper stock importers, 422, West Broadway, N. Y., is on a business trip to Germany, England and France, and possibly to Alexandria.

Papermakers' Felts.—A report from Washington, D.C., states that the Treasury Department has promulgated a circular providing that on the exportation of papermakers' felts and jackets, manufactured wholly from imported wool, a drawback will be allowed equal in amount to the duty paid on the wool used in the manufacture, less the legal deduction of 1 per centum. The entry under which the merchandise is to be inspected and laden must show the marks and numbers of the shipping packages, with the name, dimensions, net weight and "mill number" of each felt or jacket contained in each package, separately, describing the same as they are described in the export invoice. The gross, tare and net weight of each shipping package must be shown in said entry, and must be marked or stenciled on the package. When it may become necessary to ship felts or jackets on which drawback of duties is claimed in the same package with other merchandise of like character, not subject to drawback, each must be separately described in the entry, in the manner herein-before provided, and must be so marked or labeled and packed for shipment as to be readily distinguished on examination by the lading inspector.

The Exports of Paper at New York, according to the last weekly list received, included the following:—To London, 876 cases and 393 bundles; Liverpool, 788 cases; Bristol, 64 cases and 128 bundles; Hull, 484 cases; Manchester, 100 bundles and 430 packages; Southampton, 4 packages; Cardiff, 91 packages; and Glasgow, 339 packages. Shipments to Antwerp were 474 packages; Hamburg, 139 packages; Havre, 2 cases; and Rotterdam, 9 cases. Exports to Australasia were 7,122 packages; Argentine, 210 packages; Brazil, 223 packages; B. W. Indies, 3,385 packages; Africa, 20 packages; Japan, 30 cases; and Mexico, 60 packages.

CANADA.

Messrs. Drysdale and McInnis, representing a syndicate, have made a proposition to the town of Dartmouth, N.S., to establish a paper and pulp mill to employ from 200 to 300 men. The town council has been asked to exempt the works from taxation for 50 years, and has offered exemption for 30 years, which will probably be accepted by the syndicate. The company propose to manufacture chemical pulp, to be consumed in its own paper mill. The capacity, 20 tons per day, would require 15,000 cords of spruce wood, 8,000 tons of sulphur, and 1,000 tons of limestone per annum.

At a recent sale of the Crown lands held by the Provincial Government of Quebec, nearly all the lots offered were sold, and some of them, especially the spruce limits, brought astonishingly high prices. The Chicoutimi Pulp Co. were prominent purchasers of various Lake St. John lots.

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MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, APRIL 15, 1898.

The Proposed Combination of British "News" Mills.

IN our last issue we referred to the preliminary negotiations going on for the acquisition of the principal British "news" mills with the view of forming one large company. This step is felt desirable by our "news" mills owing to the growth of American competition, and as one company in the United States practically controls the output of news in that country it is feared by makers on this side of the Atlantic that competition will be even more severe in the future than in the past. There are various rumours in circulation, one being that home mills will endeavour to supply a better paper than the Americans, at comparatively lower prices, or at least at prices no higher; also that a policy will be pursued in order that the Americans may feel that business with Great Britain can only be carried on at a loss. There is no doubt that action will be taken to meet foreign competition, but in what form it is premature to speak; of course steps will also be taken to avoid local competition, and to save freight in every direction possible. Several meetings have been held lately in London of the parties interested, but at the present stage of the negotiations publicity is not considered advisable. We have heard from several sources the names of the principal mills likely to be included in the combine, but in deference to the wishes of those actively identifying themselves with the movement, we refrain from publishing the list until arrangements have assumed a more definite shape. Even the mere suggestion of a "combine" has served to boom the shares of some of the Lancashire "news" mills; take for instance the Star ordinary, in which an advance has to be recorded of about 30s. per share in something like a fortnight, the price being now in the neighbourhood of £9 per share. The shares are £5 each, fully paid. The premature publication of information concerning the proposed "combine" has, we should imagine, benefited some people.

* * *

The Growth in Foreign Paper Supplies.

THE Board of Trade Returns, just issued, allow a comparison to be made of the imports of foreign paper, strawboards, etc., for the first three months of this year with the corresponding period of last year, the total values being as under:—

Jan.-Mar., 1898	£891,727
,, 1897	772,233

A comparative increase of £119,494. The value of the three months' imports of "unprinted" paper increased from £567,001 (last year) to £649,012; printed, from £79,588 to £80,932; and straw, mill and wood pulp boards from £125,644 to £161,783. The following are the comparative values of the imports of "unprinted" paper from the countries mentioned:—

	Jan.-Mar. 1897.	Jan.-Mar. 1898.	Increase or Decrease.
Sweden ...	£84,196	£93,602	+ £9,406
Germany ...	107,392	85,907	— 21,485
Holland ...	111,848	105,466	— 6,382
Belgium ...	70,792	70,279	— 513
Various ...	192,773	293,758	+ 100,985
Totals ...	£567,001	£649,012	+ £82,011

It will be seen that the increase is chiefly in the arrivals from "Other Countries" (principally the United States). There is a slight increase in the value of imports from Sweden, but a heavy falling off in German trade, and less severely in that of Holland and Belgium.

* * *

Exports of British Paper.

THE three months' figures show that exports of British paper compare favourably with those for the corresponding period of last year, the total values being:—

Jan.-March, 1898	£382,611
,, 1897	382,130

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It is satisfactory to know that we are not losing ground, but the exports make a very poor show when compared with the imports of foreign paper into this country. The value of the three months' exports of writings, printings, and envelopes last year was £243,977, and this year £243,115; hangings, £54,773 against £63,093; and other descriptions, £83,380 against £76,403. The only increase is in hangings, as the following comparative values of the exports of paper (excluding hangings) to the countries mentioned show a decrease of £7,839:—

	Jan.-Mar., 1897.	Jan.-Mar., 1898.	Increase or Decrease.
France ...	£25,965	£25,707 —	£258
U.S.A. ...	17,811	10,538 —	7,273
S. Africa ...	38,798	31,597 —	7,201
B. E. Indies...	30,811	37,971 +	7,160
Australasia ...	126,569	121,248 —	5,321
B.N. America	8,333	7,049 —	1,284
Various ...	79,070	85,408 +	6,338
Totals	£327,357	£319,518 —	£7,839

There is not much ground for congratulation, decreases being the rule, the only exceptions being B. E. Indies and "other countries."

* * *

Papermakers' Raw Materials.

There is not that spirited demand for raw materials this year as characterised the opening of 1897:—

	Jan.-Mar., 1897.	Jan.-Mar., 1898.	Increase or Decrease.
Wood pulp ...	£431,585	£433,194 +	£1,609
Esparto... ...	261,712	236,671 —	25,041
Rags	66,917	51,098 —	15,819

The above comparative values show an increase in wood pulp, but decreases in esparto and rags. We believe, however, that a good forward business has lately been negotiated in esparto.

Stocks and Shares.

The paper share market has been rather quiet owing to the holidays intervening, and few transactions are reported, although the general tendency is of a steady nature. East Lancashire, still on the improve, show a further advance of ¼ all round. Thos. Owen ord. have been enquired for, and are quoted also ¼ better than last week. Kellner's debs. are now ex-dividend, but are stronger at 2 points advance. A. M. Peebles ord. are still of a drooping character, and a fall of another ⅛ is to be noted. North of Ireland steady, with few sellers about. Star ord. rather offered at 9 1/16d.

Chemical shares are practically stagnant with perhaps the single exception of United Alkali, the pref. of which are again in favour of buyers, and have risen ¼; the ord. are a shade firmer, but little business is doing.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
10	10	Bath Paper Mill Co. (Ld.)	5	11⅛ 12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	11½—12½
3	5	Burnley Paper Co. (Ld.)	10	6⅛—6⅜
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref. ,,	6	7⅛—7⅜
2⅜	3	Collin (Darwen) Paper ,,	nil	4/6—5/3
3⅜	5	Darwen Paper Co. ,,	15	8½—9½
10	10	E. Lancashire Paper Co. ,,	nil	8— 8½
10	10	do. do. 6% pref.	nil	8⅜—8⅝
5	5	do. do. bonus	nil	4—4½
100	100	Ekman Pulp & Paper Co. Ltd. debs.	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	7—7½
5	5	Hyde Paper Works Co. ,,	nil	1⅛—2
2½	5	Kelln'r-Part'gt'n P'p Co,,	15	7⅛—8 1/16
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	104—108 x.d.
4	5	N. of Ireland Paper Co. ,,	12½	8½—9
7	10	Olive Brothers ,,	10	7½—7⅞
1	1	Owen, T. & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2⅛—2½
5	5	Peebles (A. M.) & Son ,,	5⅛	7⅛—7⅜
5	5	do. 5% cum. pref.	5	6¼—6½
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	6⅞—7⅛
1	1	do. do. cum. pref.	5	1⅛—1⅜
4½	5	Roach Bridge Paper Co. ,,	10	5½—5⅞
5	5	Star Paper Co.	10	8⅛—9⅛
3	5	do. do. cum. pref.	10	6⅛—6⅞
10	10	Waterlow & Sons non.-cum. def.	—	14⅛—14⅜
		do. do. non.-cum. pref.	4	14⅛—14⅜ x.d.
10	10	do. do. cum. pref.	3½	10⅛—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	7⅛—8 x.d.
10	10	do. do. cum. pref.	7	10⅛—10⅜ x.d
100	100	do. do. debs. (red. 1904)	6	104—106
10	10	Brunner, Mond & Co. (Ld.)	20	41⅞—42
3½	10	do. do. "New" ,,	20	16⅛—16⅜
10	10	do. do. 7% pref. ,,	7	17⅜—17⅝
5	10	do. do. do. new issue	7	8⅛—8⅜
1	1	Castner-Kellner Co. ,,	—	19/6 - 20/6
5	5	Clayton Aniline cum. pref.	6	5⅛—6⅛
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11⅝
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	28/—28/6
10	10	do. do. cum. pref.,,	7	7⅛—8⅛ x.d.
100	Stock	do. mort. deb. (red. after 1901)	5	108½—109½

NEW PATENTS.

APPLICATIONS.

7,470. Improvements in and apparatus for effecting electrolysis. W. L. Wise.

7,471. Improvements in electrolysis. W. L. Wise.

7,726. Improved method of converting acid, sulphates of soda or potash into caustic alkali. J. Grossmann.

7,906. Improvements in or relating to the manufacture of paper. W. K. Trotman.

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(7½d. each. By post 8d.)

1897.

8,114. Process for the manufacture of coloured or marbled variegated or like papers. Stone.

1898.

2,327. Manufacture of paper felt. Davidson.

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IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

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CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries.

OFFICES—58, SHOE LANE, LONDON, E.C.

Situation Vacant.

WANTED, for Paris, a Gentleman who understands accounts, and is able to conduct correspondence in French and Swedish.—Address, No. 7,251, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7251

Situations Wanted.

A YOUNG GENTLEMAN, Pole, 26, able to converse and correspond fluently in German, French and Spanish, well up in the English language desires situation as Foreign Correspondent or Clerk, etc Expected salary, 30s.—Rakowski, Hydro, Eastbourne. 7240

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

PAPER and Paper Bag Making.—Gentleman with long experience in large mill making Shops and Caps, etc., and all kinds of Paper Bags, and with a good connection, is open for engagement as Secretary, Cashier, or Traveller. Unexceptionable testimonials and references.—Address, No. 7,237, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe Lane, London, E.C. 7237

PAPERMAKER is open to take an engagement as Working Foreman, making common and M.G. Browns, also Rope Browns, having had 11 years experience in last situation.—Address No. 7,247, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7247

WANTED.—Situation as Manager or Foreman; used to printings, news, etc.; 6 years in last mill; good references.—Address, No. 7,248, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7248

Miscellaneous.

AGENCY WANTED.—Representation of Mill making Cardboards, Strawboards, or Pulpboards. Commission only.—Address H., No. 7,253, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7253

CANNON STREET, Close to S.E.R. Station.—To be let, capital well-lighted Warehouse with two frontages, having five storeys, fitted with crane, loop-hole doors, and offices; excellent loading facilities.—Apply to Messrs. Edwin Fox and Bousfield, 99, Gresham-street, Bank, E.C. (5,535) 7252

FACTORY SITES.—For Sale, Several Central Sites. Every facility given to purchasers. Cottages built for workmen; favourable situation for transport of goods; junction of five different railways; also water carriage.—For full particulars, apply F. H. Cooke, Land Agent, Peterborough. 7250

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

A Stämpelbok,

Or Book of the Trade Marks of the Chemical and Mechanical Wood Pulp Mills in Sweden and Norway.

Each Country in a separate volume, 8vo. cloth.

Compiled by Mr. K. VON HOFSTEN, Gothenburg, Secretary to the Association of Scandinavian Pulp Makers (Swedish Section).

☛ Copies can be had at the Office of the WORLD'S PAPER TRADE REVIEW, price 7.6 each post free.

These Books not only contain the Shipping Marks of each Mill, but give also full particulars about their Names, Owners, and Production; they should therefore prove Most Useful Guides to anyone connected with the Pulp Industry in Scandinavia.

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Special Supplementary Lists of the New Mills started to the end of 1897 are now included.

Sole Agent or the U.K.:

W. JOHN STONHILL, 58, Shoe Lane, LONDON, E.C

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

3896	b	Rotterdam	Manchstr	354	b	Rotterdam	London
155	r	,,	Liverpool	883	,,	Amsterdam	,,

WOOD PULP BOARDS.

45	c	Boston	London	33	r	Gothenburg	Grgmuth
579	b	New York	,,	440	b	Hambro	Hull
5	c	Christiania	Grngmuth	45	c	Christiania	,,
20	b	Rotterdam	,,	107	b	Gothenburg	,,
25	,,	Gothenburg	,,				

MILLBOARDS.

8106	b	Harlingen	Hull	3090	b	Delfzyl	Goole

CARDBOARDS.

72	b	Rouen	London

PASTEBOARDS.

400	b	Rotterdam	London	1	c	Rotterdam	Leith
399	,,	New York	,,	120	b	Harlingen	,,
8	,,	Harlingen	,,	128	,,	New York	Bristol
45	,,	Hambro	Leith	1	c	Rotterdam	Grngmth

b—bales. c—cases. r—rolls. cr—crater.

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PEMBROKESHIRE.

FOR SALE, BY PRIVATE TREATY,

THE LEASEHOLD PROPERTY,

known as

The Prendergast Paper Mills,

together with a

DWELLING HOUSE,

Garden and Out-premises, Orchard and Hayguard, also a Field adjoining containing 4 a. 1 r. 30. p., all held under a Lease for 21 years dated 20th August, 1894, at a Rent of £80 per annum free of tithe. The said Lease contains a clause enabling the Lessee to purchase the Freehold for the sum of £1,000.

The Mills contain all the requisite Machinery for Paper-making, and there is a plentiful supply of water from the River Cleddaw.

For further particulars and to treat apply to Messrs. T. Rule, Owen and Son, Estate Agents and Valuers, Haverfordwest; or to Messrs. Eaton, Evans and Williams, Solicitors, Haverfordwest. 1316

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Fancy Trades, &c.

The States of the German Empire, Provinces, Towns and Firms are alphabetically arranged, and the specialties of firms classified

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THE SCANDINAVIAN SECTION

OF THE

World's ABC Paper Mill Guide

Containing Particulars of the Paper and Pulp Mills in Norway, Sweden, Denmark and Finland.

PRICE FIVE SHILLINGS.

WE have pleasure in announcing the issue of the above. It is in a convenient 8vo form, and, to some extent, on the lines of our last Mill Guide, but the information there given is very considerably added to with the view of making this section of the work a complete directory of the "Paper and Pulp Trade of Scandinavia." Full particulars, are given of class of pulp or paper made, output, machinery and power used, nearest railway station, managers and owners, &c., &c.

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☛ PAPER DEALERS,
☛ MILL FURNISHERS,
☛ ENGINEERS,
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☛ PRINTERS,
☛ STATIONERS,
☛ PUBLISHERS, &c., &c.

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WORLD'S PAPER TRADE REVIEW'
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c., &c., at the Ports of London, Liverpool, Manchester, Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams

Telegrams—"STONHILL, LONDON."

CHEMICALS.—Owing to the holidays, business during the past week has been rather limited, and prices are without quotable change. Reports from the Tyne and Clyde state that active arrangements are being made for northern shipments. BLEACHING POWDER is steady at £5 5s. soft wood on rails. AMMONIA ALKALI 58 per cent. is quoted £4 5s. per ton at makers' works. CAUSTIC SODA, White, 77 per cent. stands at £8 10s. to £8 12s. 6d., and SODA CRYSTALS at £2 17s. 6d. to £3 per ton.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½%	5 5 0
,, ,, barrels	...	,, ,,	2½%	5 15 0
,, ,, tierces	...	,, Hull	2½%	5 2 6
,, ,, ,,	...	Goole	2½%	5 2 6
,, ,,	...	f.o.b. Glasgow	2½%	5 2 6
Alum Lump) ,,	...	f.o.b. Liverpool	2½%	4 12 6
,, ,, barrels	...	,, ,,	2½%	4 15 0
,, ,, tierces	...	,, Hull	2½%	4 12 6
	...	Goole	2½%	4 12 6
,, ,, ,,	...	London	2½%	5 2 6
,, ,, ,,	...	f.a.s. Glasgow	2½%	4 10 0
Alumina Sulphate	...	f.o.b. Tyne	net	3 11 3
Aluminoferric Cake, slabs		Liverpool ...	...	2 15 0
,, ,, tierces		,, ...	...	3 2 6
Alumina Cake, ... slabs		Glasgow ...	...	2 10 0
Blanc Fixe ...	...	f.o.b. Tyne	net	6 17 6
Bleach, ...	...	,, ,,	net	6 0 0
,, (soft wood)	...	f.o.r. Lancs.	net	5 5 0
,, (hard wood)	...	f.o.b. Liverpool	net	6 0 0
,, (soft wood)	...	landed London	net	6 5 0
Borax (crystals) ...	...	... ...	net	14 10 0
,, powdered ...	...	... ...	net	15 0 0
Chloride of Barium	...	f.o.b. Tyne	net	6 15 0
Caustic White 76%	...	f.o.b. Liverpool	net	8 7 6
,, 74%	...	,, ,,	net	8 2 6
,, 70%	...	,, ,,	net	7 10 0
,, 70%	...	f.o.r. Lancs.,	net	7 7 6
,, 60%	...	f.o.b. Liverpool	net	6 10 0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5 15 0
,, 60%	...	f.o.b. Liverpool	net	5 17 6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4 12 6
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4 15 0
,, ,, 48%		,,	net	4 12 6
,, ,, 58%		f.o.r. Widnes	net	4 10 0
,, ,, 48%		,, ,,	net	4 5 0
,, Ammonia 58%		f.o.b. Liverpool		4 5 0
,, ,, 48%		,,		4 0 0
,, Caustic 48%		,,		4 12 6
,, 57-58%		,,		4 17 6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5 0 0
,, 10-ton lots		ex ship Liverp'l net		5 5 0
Oxalic Acid	...	f.o.b. Liverpool	3½%	per lb 3
Salt Cake ... ,,	...	on rail, in bulk		1 0 0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35 0 0
,, (2nds)	...	,,		33 0 0
Soda Crystals ...	...	f.o.b. Tyne	net	2 17 6
,, ,, ...	...	ex ship Thames	2½%	2 17 6
,, ...	...	f.o.b. Liverpool	5%	3 0 0
Sulphur, roll		f.a.s. works	2½%	6 5 0
,, flowers		,, ,,	2½%	7 5 0
,, recovered ...		,, ,,	2½%	4 15 0
Sulphate of Ammonia ,,		,, ,,	2½%	8 15 0
,, of Copper ...		,, Liverpool	5%	16 5 0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	... 4 10
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn	3 15
Blanc Fixe (c.i.f. London)	... 7 0
White Sugar of Lead	.. 24 10
Zinc Oxide	... 18 5
Bleaching Powder	... 4 15

CHEMICAL WOOD PULPS.—A fair enquiry is reported for SULPHITE at steady prices. SODA pulps quiet.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8 12 6	to 9 0	0
,, Superior ,, ...	9 5 0	,, 9 10	0
,, Bleached, ...	11 10 0	,, 15 0	0
SODA, Unbleached, Common ...	8 5 0	,, 8 10	0
,, Extra...	8 15 0	,, 9 5	0
,, Bleached	10 10 0	,, 12 0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.	to 25.	
,, Bleached	31.	,, 36	
SODA, Unbleached	21.50	,, 22.50	
,, Bleached	27.	,, 35.	
SULPHATE, Unbleached	21.50	,, 22.50	
,, Bleached	27.	,, 35.	

AMERICAN QUOTATIONS

AMERICAN SULPHITE, Unbleached	$1.62 to 2	
SODA Bleached	1.70	2
FOREIGN SODA, Unbleached ...	2 15	2.10
,, ,, Bleached	2.70	2.80c.
,, SULPHITE, Unbleached	2.30	,, 2.75c.
,, ,, Bleached...	3.25	,, 3.35c.

MECHANICAL WOOD PULPS.—The demand is rather quiet. Although in some instances makers are reported to have made concessions in prices, the market on the whole is fairly firm.

BRITISH PRICES.
Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£6 10	0	
Pine, Dry	£4 5	0 to 4 12	6
,, Moist	2 2	6 ,, 2 7	6
Brown, Dry	4 15	0	
,, Moist	2 10		

FRENCH QUOTATIONS (PARIS).
Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt.)

Pine Pulp, 50% moisture, ordinary ...	Frs. 11.	to 12.
,, ,, fine ...	12.50	,, 13.
,, dry, ordinary	11.50	,, 11.75
,, ,, fine	11.75	,, 13.
Aspen, ,, ,, ...	16.	,, 17.50
Half-Chemical Brown, 50% moisture	10.50	,, 11.
,, ,, dry ...	12.50	,, 13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $12 to $15

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
6711 bales	Drammen	E. Lloyd	London
800 ,,	,,		,,
480 ,,	,,	Johnsen and Jorgenson	,,
100 ,,	Ghent		,,
527 ,,	Hambro		,,
400 ,,	Gothenburg		,,
398 ,,	,,	Green and Co	,,
44 ,,	,,	R. L. Lundgren	,,
148 ,,	,,	Spicer and Son	,,
272 ,,	,,	H. Pearsall	,,
320 ,,	,,	Alsing and Co	,,
48 ,,	Baltimore		,,
1419 ,,	Christiania		Hull
573 ,,	Gothenberg		
420 ,,	Drontheim		,,
61 ,,	Bergen		,,

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Quantity	From	Importer	Port
4298 bales	Sarpsborg		Manchester
850 ,,	Oporto		,,
40 ,,	Ghent		,,
136 ,,	Gothenburg		,,
108 ,,	Bergen		Leith
300 ,,	Oporto		,,
56 ,,	Rotterdam		,,
812 tons	Carthagena	H. Ottomann	Granton
159 bales	Helsingborg		Grimsby
180 ,,	Christiania		Grangemouth
500 ,,	Christiansand		,,
2400 ,,	Arendal		Preston
2352 ,,	Drammen		,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	140 bales	PORTUGAL...	1150 bales
FINLAND ...	159 ,,	SWEDEN ...	6289 ,,
GERMANY ...	507 ,,	SPAIN ..	812 tons
HOLLAND ...	56 ,,	U.S.A.	48 bales
NORWAY ...	15429 ,,		

ESPARTO.—Spanish is in good demand; prices firm. There is a good enquiry for African.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—	Fair to Good	...	...	£4	15	0	to 5	2 6
,,	Fine to Best	...	..	5	12	6	,, 5	17 6
Oran —	Fair to Good	..	...	2	17	6	,, 3	0 0
,,	First Quality	...	...	3	1	3	,, 3	2 6
Tripoli —	Hand-picked	...	...	2	17	6	,, 3	0 0
,,	Fair Average	...	...	2	12	6	,, 2	15 0
Bona & Philippeville		...	...	3	1	3	,, 3	2 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
994 tons	Arzew	R. H. Hay and Co	Granton
812 ,,	Carthagena	H. Ottman	,,
968 ,,	Oran	C. J. Turcan	,,

FOREIGN RAGS.—French stock is in good demand for the British market. German and Dutch packers report business quiet. The week's arrivals at British ports were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
93	Ghent	Hull	50	Antwerp	Grimsby
43	Hambro	,,	109	Rotterdam	,,
7	Stettin	,,	95	Hambro	,,
288	Orpenhagen	,,	659	Dieppe	,,
360	Konigsberg	,,	48	Jersey Southamptn	
31	Leghorn	,,	5	Mossel Bay	,,
17	Naples	,,	19	Cherbourg	,,
149	Amsterdam	,,	20	Guernsey	,,
107	Bordeaux	,,	202	Bordeaux	Liverpool
16	Bremen	,,	3	Philadelphia	,,
28	Rouen	,,	33	Jersey	Bristol
66	Melbourne	London	48	Antwerp	,,
24	Cologne	,,	61	St. Nazaire	Newhvn
64	Gothenburg	,,	59	La Pallice	,,
63	Leghorn	,,	7	Bordeaux	Manchstr
139	Ghent	,,	32	Ghent	,,
41	Calais	Goole	52	Rotterdam	Leith
29	Antwerp	,,	117	Ghent	,,
102	Hambro	,,	20	Amsterdam	,,
347	Boulogne	,,	12	Hambro	,,

Totals from Each Country:

AUSTRALIA	65 bales	GERMANY ...	99 bales
BELGIUM ...	508 ,,	HOLLAND ...	330 ,,
CHANNEL Isles	101 ,,	PRUSSIA ...	360 ,,
DENMARK ...	288 ,,	SPAIN ...	111 ,,
CAPE	5 ,,	SWEDEN ...	64 ,,
FRANCE ...	1530 ,,	U.S.A.	3 ,,

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	10/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No I 6/0; No. II	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	4/0
SPF	11/0	CSPFFF	10/0
FF	8/0	CSPFF	16/0
FG	8/6	CFB (Blue)	/0
FFX	7/0	CFX (Coloured) ...	4/0

FRENCH RAGS.

Bristol, London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Blue Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ..	3/6	,, Stay ,,	15/0

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope coils)	8/0	Not ree from wood	5/0

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3.0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linens	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cuttings	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste	10/0; Fair ditto 8/0
Flax Card Waste	6/0
Hemp Waste, No. 1 8/0; No. 2	3/0

PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF	12/6	Jute I	3/6
FG	10/0	,, II...	2/0
LFB	8/0	Rope I...	8/6
FF	5/6	,, II ...	6/0

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	2nd Canvas ...	7/0
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/0

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* Not at Smyrna and Salonica.

HOME RAGS.—LONDON: Business rather quiet during the past week owing to holidays.—BRISTOL: Fair enquiry.—MANCHESTER: Market quiet.—EDINBURGH and GLASGOW: Trade steady.—DUBLIN: Moderate demand.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/0
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected) ...	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/0	Gunny	2/0-2/2

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BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do.	9/6-10/6
Seconds	5/0	Light Prints	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best)	9/6	Bagging	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares	2/6-3/0

EDINBURGH:

Superfines	15/0	Black Cottons	2/6
Outshots	12/0	W. Manilla Rope	7/0
Mixed Fines	14/0	Tarred Manilla Rope	5/6
Common Seconds	7/0	,, Hemp Rope	8/0
First do.	10/0	Rope Ends (new)	6/0
Prints	5/0	,, ,, (old)	4/0
Canvas (best)	15/0	Bagging	2/3
2nd	8/	,, (clean)	3/0-4/0

GLASGOW.

Fines	12/6-16/0	Canva No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues	3/3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	9/0

DUBLIN.

Whit Cuttings	16/0	Mill Bagging	2/0
Fines	9/0	White Manilla	6/9
Seconds	3/6	Tarred Hemp	6/0
Light Prints	2/6	Rigging	10/0
Black do.	1/6		

WASTE PAPERS.—Market firm. Prices:

Cream Shavings	10/0	Small Letters	3/3
Fine ,,	8/0	Large ,,	4/0
Mixed ,,	2/6	Brown Paper	2/0
White Printings	7/0	Light Browns	3 3
White Waste	1/9	Dark ,,	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets	3/0
Blue Paper	2/0	Strawboard Cuttings	1/0
Crushed News	2/0	Jacquards	2/6

For Export: 2s/- per ton extra.

STRAW.—Prices:

Oat Straw, c.i.f. London 37/0; f.o.r. Goole, 37/6
Wheat ,, do. 37/0; do. 37/6
Rye do. 50/6; do 50/0

STRAW PULPS.—Steady enquiry.

Prices, c.i.f. London, Hull or Leith.

German, dry, No. 1 £14 0 0
,, No. 2 £13 0 0

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings	£3 0 to £4 0

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

STARCH.—Prices:

F.o.r. London, less 2½%

Maize—Crisp, £9 5/-; Pearl, £6 5/-; Powder, £6 15/0
Special £14.
Farina—Prime, £12 0/-; B.K.M.F., £14 0/-.
Delivered, less 2½%:
Rice—Special (in chests), £19 0/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.
Dextrine—£1

SIZING.—A steady demand is experienced at recent advances.

English Gelatines per cwt.	90/0 to 120/0
Foreign ,,	70/0 ,, 100/0
Fine Scotch Glues	45/0 ,, 60/0
Long Scotch Glues	35/0 ,, 40/
Common Black ,,	25/0 ,, 28/0
"Town" Glues	38/0 ,, 45/0
"Bone" Glues	26/0 ,, 30/0
Foreign Glues	28/0 ,, 35/0
Bone Size	5/6 ,, 10/0
Gelatine Size	6/6 ,, 10/0
Dry B.A. Pieces	50/0 ,, 55/0
,, English Pieces	35/0 ,, 45/0
Wet ,, ,,	8/6 ,, 9/0
,, Sheep Pieces	3/0 ,, 4/0
Buffalo Hide Shavings	32/0 ,, 40/0
,, Picker Waste	32/0 ,, 35/0

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4/10½	5/-	5/3	5/4½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS.—Moderate demand.

Mineral Black	cwt. 3/6	PASTE COLOURS with	
do. superior	,, 4/0	60% of colour, as follows:	
Pure Ivory Black	,, 12/0	Orange Pulp	cwt. 42/0
Ochre	,, 2/3	Golden Yellow Pulp	30/0
French J. C. Ochre	ton 60/0	Lemon ,,	,, cwt. 30/
Chrome (pure)	cwt. 40/0	Prussian Yellow	,, 36/0
Red Oxide	,, 4/6	Green (free of arsenic	26/0
Umber, Devonshire	,, 50/0	Paste Blue, 20%	18/0
do. Turkish	,, 40/0	,, 33% ; 26/0; 45%	45/0
Lamp Black	,, 5/0-7/6	Imperial Yellow (dry)	16/0
Ultramarine (pure)	35/0-45/0	(less 2½% d/d)	
Cochineal	lb. 4/9-2/0		

MINERALS.—A fair amount of business is reported in CHINA CLAY, FRENCH and ITALIAN CHALKS. More enquiry is experienced for SATINITE and SNOWDRIFT. BAUXITE keeps firm.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine	28/0	less 2½%; del. Lancashire	38/0
Pottery Super.	24/0	,, ,,	34/0
Ball Seconds	20/0	,, ,,	30/0
Seconds	15/0	,, ,,	25/0
Thirds	11/0	,, ,,	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 9/0 to 23/6, bags 4/0 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

French Chalk, W.E., W.I.N.S.E.R., W.O. and other brands, 58/0, 64/0, 73/6, and 75/0 per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 2/6 per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-.

Patent Hardening (2 ton lots) f.o.r. Lancs., £35/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 15/6; calcined, £10 7/6.

Magnesite (in lump) 39/6 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.

Bauxite, minimum alumina, 60%, 16/3 f.o.b.

Pyrites (non-cupreous), f.o.b shipping port 4½d. per unit.

Satinite, £3 to £3 6s. 6d., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/3 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0.

METALS.—LONDON: COPPER firm; TIN quiet; LEAD steady. Tuesday's official closing prices:

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	51	0	0	51	5	0
,, three months	51	7	6	51	12	6
Tough	54	5	0	54	10	0
Best selected	55	0	0	55	10	0
Strong Sheets	62	0	0			
TIN—						
Fine foreign, cash	65	3	9	65	13	9
,, three months	65	17	6	66	7	6
LEAD—						
Spanish	12	13	9	12	15	0
English				12	16	3

LIME—The present price is 10/6 per ton f.o.r.

THE WORLD'S PAPER TRADE REVIEW.

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Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	6331	484	1961
ARGENTINE	—	83	3
AFRICA	96	58	441
BELGIUM	33	12	20
CAPE COLONY	27	3	414
CANADA	49	47	—
CHANNEL ISLES ...	—	—	42
CHINA	15	68	179
FRANCE	55	67	101
GIBRALTAR	—	—	14
GERMANY	—	38	—
HOLLAND	—	30	547
INDIA	497	672	364
JAPAN	190	33	—
MAURITIUS	—	15	2
NEW ZEALAND ...	319	78	491
PORTUGAL	—	—	7
SPAIN	181	25	—
SWEDEN	—	—	11
S. AMERICA	—	12	8
U.S.A.	96	14	16

FROM GLASGOW.

	Printings. Cwts.	Writings. Cwts.	Various. Cwts
AUSTRALASIA	87	176	—
CANADA	—	37	23
CHINA	50	1	—
FRANCE	—	—	14
INDIA	126	11	12
JAPAN	1212	—	—
NORWAY	1	—	—
NEW ZEALAND ...	—	—	227
U.S.A.	6	—	—
W. INDIES	—	18	9

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls
BELGIUM	815	—	15
DENMARK	—	—	5
FRANCE	353	6	—
GERMANY	3180	3	—
HOLLAND	27136	11	59
NORWAY	2562	—	—
SPAIN	40	13	—
SWEDEN	4579	—	94
U.S.A.	2237	15	276

Including the Following:—

Quantity	From	Importer	Port
144 bales	Gothenburg	J. Eberstein	London
150 ,,	,,	S. C. Lockwood	,,
16 ,,	,,	Becker & Wagner	,,
12 ,,	,,	C. Morgan & Co	,,
15 ,,	,,	Brown, Brough & Co	,,
17 ,,	,,	Cookson & Co	,,
268 ,,	,,	R. L. Lundgren	,,
551 ,,	,,	Schenkenwald & Co	,,
185 ,,	,,	H. S. Reed & Co	,,
7 ,,	,,	W. D. Edwards	,,
4 ,,	Skien	Spicer Bros.	,,
21 ,,	,,	Brown, Brough & Co	,,
39 ,,	,,	J. Spicer & Sons	,,
27 ,,	,,	J. Hamilton & Co	,,

Alkali and Bleach.

The following statistics, taken from the official returns, show the quantity and value of alkali and bleaching materials shipped to the countries mentioned for the month of March and for January-March, 1898, as compared with 1897:—

ALKALI.

Country.	March.		Jan.-March.	
	1897.	1898.	1897.	1898.
Quantity ...	Cwts.	Cwts.	Cwts.	Cwts.
Russia	13,059	10,229	24,819	22,319
Sweden & Norway	4,405	8,813	10,431	23,351
Germany	17,092	18,070	26,171	36,979
Holland	12,451	11,206	26,513	29,919
France	7,123	4,987	13,366	15,315
Spain & Canaries...	25,667	34,200	78,280	89,210
Italy...	16,837	24,914	52,868	61,469
United States ...	253,040	89,149	586,578	280,780
Australasia ...	16,755	20,133	45,181	51,006
B. N. America ...	9,076	9,578	16,704	20,751
Other Countries ...	99,285	114,589	251,542	335,588
Totals ...	474,790	345,873	1,132,262	966,717
Value ...	£	£	£	£
Russia	3,574	2,917	6,799	6,586
Sweden & Norway	903	1,806	1,973	5,211
Germany	4,103	3,961	6,641	8,094
Holland	2,577	2,240	5,834	6,032
France	2,553	1,709	4,761	5,424
Spain & Canaries...	8,335	11,669	25,906	30,025
Italy...	5,037	7,532	15,723	18,425
United States ...	56,061	18,725	129,357	55,566
Australasia... ...	4,731	5,897	12,817	15,606
B. N. America ...	2,606	2,617	4,532	5,516
Other Countries ...	27,038	32,165	69,210	95,554
Totals ...	117,538	91,238	283,543	252,341

BLEACHING POWDER, &c.

Quantity	Cwts.	Cwts.	Cwts.	Cwts.
United States ...	58,758	58,662	166,374	179,671
Other Countries ...	28,721	31,227	88,649	78,552
Totals ...	87,479	89,889	255,023	258,223
Value ...	£	£	£	£
United States ...	18,882	16,145	53,352	51,016
Other Countries ...	9,650	9,888	29,466	25,122
Totals ...	28,532	26,033	82,818	76,138

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Paper and Paper Stock.

AMERICAN IMPORTS & EXPORTS.

The following imports and exports of paper and paper stock are for the month of January—the latest period for which the official figures have been compiled by the Treasury Department—supplied to the *World's Paper Trade Review* by the Associated Trade and Industrial Press, of Washington, D.C.:—

IMPORTS.

The total amount of crude paper stock imported during January, duty free, amounted to 231,000 dols., against 218,239 dols. worth a year ago. The total for the seven months amounted to 1,667,993 dols., as compared with 1,603,860 dols. worth during the corresponding period of last year.

Of this total there were 2,861,313 pounds of rags other than woollen, valued at 51,567 dols., as compared with 3,196,841 pounds the year before, valued at 45,051 dols. The total for the seven months amounted to 28,690,521 pounds of rags other than woollen, valued at 418,033 dols., as compared with the imports of last year, which were 25,153,112 pounds other than woollen, valued at 330,537 dols.

All other crude paper stock not otherwise specified amounted in January to 169,832 dols., as against 173,188 dols. worth last year. The total for the seven months amounted to 1,259,960 dols., as compared with 1,273,323 dols.

The dutiable imports and manufactures of paper amounted during January to 217,803 dols., as compared with 177,534 dols. worth last year. The total for the seven months amounted to 1,605,299 dols., as compared with 1,733,675 dols. worth the year before.

The imports of paper from the countries mentioned during January were of the following value:—

	1897.	1898.
United Kingdom	$29,618	$40,938
Belgium	3,747	4,482
France	12,400	19,926
Germany	105,136	125,084
Other Europe	3,254	3,846
Japan	21,659	22,440
Other countries	1,660	1,687

During the seven months:—

	1897.	1898.
United Kingdom	$322,057	$291,639
Belgium	38,685	31,560
France	107,811	130,853
Germany	1,101,957	1,055,204
Other Europe	33,147	29,621
Japan	116,987	105,465
Other countries	16,031	20,592

EXPORTS.

The total domestic exports of paper and manufactures of paper during January amounted to 512,570 dols., as against 260,582 dols. worth last year. The total for the seven months amounted to 3,127,121 dols., as compared with 1,675,193 dols. worth the year before.

The exports for January, 1897 and 1898, were as follows:—

	1897.	1898.
Paper hangings	$13,357	$23,959
Printing paper	*a*	283,809
Writing paper and envelopes	7,954	12,818
All other	239,271	191,933

For the seven months ended January, 1897 and 1898:—

	1897.	1898.
Paper hangings	$38,135	$87,398
Printing paper	*a*	1,611,096
Writing paper and envelopes	59,865	104,010
All other	1,577,103	1,324,617

a Not stated separately prior to July, 1897.

During the month of January, 1898, wood pulp to the value of 60,256 dols. was exported, and for the seven months ended January 30th, 1898, the exports of this article aggregated 251,254 dols.

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A B..	50	19¾	425	21 5	550	27 10	150	7 10	100	5 0	80	4 0
A Ba.	55	21¾	485	24 5	610	30 10	160	8 0	105	5 5	80	4 0
A C..	60	23¾	575	28 15	700	35 0	175	8 15	110	5 10	85	4 5
A Ca.	65	25½	650	32 10	775	38 15	185	9 5	115	5 15	85	4 5
A D..	71	28	730	37 0	865	43 5	200	10 0	120	6 0	90	4 10
A Da.	76	30	825	41 5	950	47 10	220	11 0	125	6 5	90	4 10
A E..	83	32½	950	47 10	1,075	53 15	240	12 0	125	6 5	95	4 15
A Ea.	91	35¾	1,050	52 10	1,175	58 15	250	12 10	130	6 10	95	4 15
A F..	95	37¼	1,150	57 10	1,275	63 15	260	13 0	135	6 15	100	5 0
A Fa.	100	39¼	1,250	62 10	1,375	68 15	280	14 0	140	7 0	100	5 0
A G..	108	42	1,400	70 0	1,525	76 5	315	15 15	145	7 5	105	5 5
A Ga.	113	44½	1,500	75 0	1,625	81 5	325	16 5	150	7 10	105	5 5
A H..	120	47¼	1,600	80 0	1,725	86 5	340	17 0	155	7 15	110	5 10
A Ha.	140	55	1,950	97 10	2,075	103 5	365	18 5	160	8 0	115	5 15
A I..	160	63	2,275	113 15	2,400	120 0	390	19 0	160	8 0	120	6 0
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THE Gentle Art of Catalogue Compilation.

THERE are few departments of commercial administration in which more appreciable progress has been made during the closing years of the present century than that which may be said to embrace the compilation, production, and issue of trade catalogues. A decade and a half ago saw a very parlous state of affairs so far as trade catalogues were concerned. Those of them which were devoted to machinery were particularly crude; those having even the most remote claim to artistic embellishment were indeed few and far between; and the memory of the odd one or two which we used to happen upon, is quite a refreshing recollection. But, happily *nous avons change tout cela;* at all events, we have come within measurable distance of a condition of affairs with which there is little to reproach ourselves; and it is highly creditable to the good taste and discernment of our engineers, that in the matter of trade catalogue production they hold a high position. This is at it should be; it is an encouraging sign of the times; and one to be cordially welcomed.

These remarks have been suggested by the receipt of a particularly dainty specimen of a trade catalogue which possesses not only a high degree of pictorial excellence, and internal and external embellishment, alike simple in scheme and effective in result, but an element of literary merit, which naturally enhances the value of the publication as a trade addendum, giving it some permanent interest to which it would not otherwise be entitled. The little catalogue —for it is not a huge, bulky affair, but a booklet of convenient pocket size—reaches us from Messrs. Cole, Marchent and Morley, of Prospect Foundry, Bradford, a firm now celebrating the jubilee of its establishment. The name will be familiar to many of our readers, for we have had occasion more than once to direct the attention of our readers to the steam engines and other mechanical specialties which they produce. The works at Bradford have, during the past eight years, been extensively remodelled, new erecting and machine shops having been built, and the pre-existing equipment supplemented by additions in the shape of new modern plant.

An engineer's catalogue is, of course, essentially a catalogue, such as it is, first of all, and anything else afterwards. Messrs. Cole, Marchent and Morley's catalogue presents an element of special interest by reason of the many suggestive and useful hints which it contains, in addition to the catalogue matter proper, which last is copiously illustrated in a manner much in advance of what one meets with in the average engineer's catalogue of even exalted pretensions. It is this fact that suggests that more than a passing notice is claimed by the little booklet.

Consideration is given at the outset to various points of importance affecting the selection of a suitable type of engine for driving purposes in a mill. One's decision in these matters is necessarily affected by questions as to the space available for the engine, the character of the load to be driven, the conditions of the water and fuel supplies, and the boiler pressure available. It is pointed out that it is usually considerations of space which decide whether the engine required is to be vertical or horizontal, or whether the cylinders are to be placed side by side, or tandem. In this particular Messrs. Cole, Marchent and Morley invariably recommend horizontal engines for powers of 150 and upwards in preference to verticals. "Not only," they say, "are they much more accessible, but they are cleaner, and do not require such deep foundations, nor very lofty engine houses with staircases. Further, in consequence of the longer strokes in proportion to the cylinder diameters, and of the better drainage arrangements, they are also more economical. In the case of two-cylinder compound engines, the placing of the two cylinders side by side or tandem, is usually decided by the width of the engine house available, the most convenient position for the driving wheel, the direction in which the ropes leave the engine, and price . . With a forward drive [when the ropes leaving the wheel go away from the cylinders] a coupled engine, *i.e.*, an engine with two cranks, can be adopted, and is, on the whole, preferable to a tandem engine, as the turning is rather steadier, and the various working parts are more accessible. The first cost, however, of a tandem engine is rather lower than that of a coupled engine, of the same power. Again, if it is desired to couple the mill line shaft direct to the engine crank shaft, a tandem engine should be adopted so as to avoid any break in the direct continuity of the shaft such as would occur if a two-crank engine were adopted, but in such a case the fly wheel should be rather heavier than usual so as to keep the angular velocity of the shaft as uniform as possible, and thus minimise the strain on keys and couplings. If the drive is by spur-gearing, a coupled engine is preferable, and here again it is important that the fly wheel should be of sufficient weight. For engines of less than 150 indicated horse-power, we generally recommend horizontal engines fitted with positively driven Corliss valves, or vertical engines of the enclosed type, and running at moderate speeds. These engines occupy little space, require little attention, and work with fair economy."

The character of load on an engine, of course, comes in for its due of consideration, and in this connection Messrs. Cole, Marchent and Morley speak highly of the results of single cylinder engines as compared with those of compounds where the load varies materially. They point out that: "A single cylinder engine can be more closely governed in speed than a compound engine, and under very wide fluctuations of load, and it has a greater range of power. Thus the maximum

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indicated horse-power obtainable from a compound engine having cylinders of 15 inches and 30 inches diameter respectively has 42 inches stroke, and a boiler pressure of 120-lbs. per square inch would be about 480 with the engine running at 80 revolutions per minute, hence the possible range of power would be 0 to 480. On the other hand a single cylinder Corliss engine with its cylinder the same size as the L.P. cylinder of the compound, *i.e.*, 30 inches diameter, and running at the same speed, would, when supplied with steam at 80-lbs., be capable of driving about 750 indicated horse-power, and would, therefore, have a possible range of 0 to 750 indicated horse-power, or 55 per cent. more than the compound. . . . Any type of engine is capable, of course, of driving a load varying from nothing to its maximum power, although it may not govern well nor work economically under such conditions. . . . The average power developed by the engine should be that power at which it will work most economically."

The questions involved in water and fuel supply receive due attention in the work before us, fuel supply being the most serious item of expenditure in connection with steam power installations, coming in for adequately detailed notice. The advantages in economy which may be secured by the use of condensing engines over non-condensing ones, wherever there is adequate storage accommodation for water available, are, of course, indicated, and the authors give some practical hints on the comparative consumption of fuel by different types of engines. Transferred to money value, they say for example, the saving per annum obtained by the adoption of triple expansion instead of a compound engine, the indicated horse-power being 600, would be £84 when coal costs 8s. per ton, and hours of running 60 per week, £126 when 12s. per ton, and the same hours of running, and £168 when at 16s. with longer hours of running, or with larger engines the saving per annum is proportionately increased. On the other hand it is wise not to overlook the fact that triple expansion engines use rather more oil, and there is slightly increased wear and tear. "Hence," say Messrs. Cole, Marchent and Morley, "where a fairly good quantity of coal is obtainable at say, 10s. per ton, and the hours of running do not exceed 60 per week, we do not recommend triple expansion engines for powers below 550 indicated horse-power. If coal, however, is dearer than this, or the hours of running much longer, triple engines can with true economy be adopted for lower powers."

Some excellent suggestions and recommendations are given regarding the substitution of new engines for old ones, the matter of boiler pressure, and the adoption of Corliss engines for mill-driving purposes. The history and development of Corliss valve gears is traced from the original patent taken out by Mr. Geo. H. Corliss, of Providence, U.S.A., nearly fifty years ago, to the Spencer and Inglis trip gear introduced in 1863, and which is still regarded as the standard trip gear, and to an improved double-clip trip gear which Messrs. Cole, Marchent and Morley have themselves introduced, and show in the booklet in application to a cylinder 42 inches in diameter. For this gear it is claimed that all the advantages which result from the use of the Spencer and Inglis type are maintained, whereas the disadvantage of its liability to wear in the sliding sleeve, is overcome. In the case illustrated, the sliding pin is carried right through the sleeve, and the sleeve is balanced round the axis of the connection to the valve lever, thus removing tendency to "sag" at the sliding portion. Wear is thus reduced. The method of dealing with the pin, which we have indicated, necessitates a modification in the arrangement of the tripping lever, and also in the connection to the valve lever, but in other particulars the construction of the new gear is precisely the same as that of the Spencer-Inglis type.

For the rest Messrs. Cole, Marchent and Morley's catalogue deals fully, both in descriptive and pictorial fashion, with the standard types of mill and other engines, condensing plant, etc., which are produced at Prospect Foundry, Bradford. The catalogue has been admirably printed by Messrs. Percy Lund, Humphries and Co., Ltd., of Bradford and London, the numerous blocks having been beautifully "made ready," and is bound in a relief stamped cover. It is one of the neatest and most creditable amongst the smaller things of its kind which have come our way for some considerable time.

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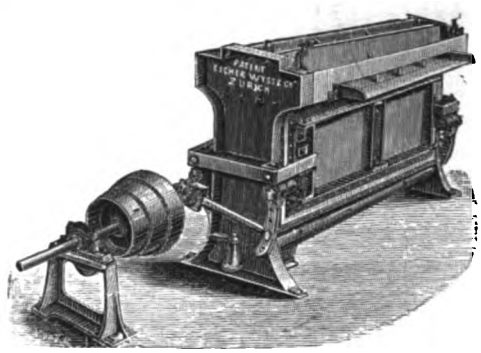

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VOL. XXIX. No. 16. LONDON: APRIL 22, 1898. EVERY FRIDAY PRICE SIXPENCE.

The Chemical Industry.

ELECTROLYTIC METHODS.

Under the heading of "The Industrial North," one of an interesting series of articles appearing in the *Times* relates to the chemical industry.

The writer, after describing the Leblanc and ammonia soda processes, says:—"Perhaps the question of greatest interest in the chemical trade now is whether the decline of the Leblanc soda process will be permanently limited by the fact that that process evolves on a large scale, and in an available manner the hydrochlorine acid required for the manufacture of bleaching powder. In other words—Is there any likelihood that bleaching powder, and other chlorine products, will come to be produced more cheaply than as an offshoot from the Leblanc soda process? Until quite lately the chlorine in the salt decomposed by the ammonia-soda process was practically lost. The ammonia in that process has for many years been 'recovered' from the ammonium chloride, which, as will be remembered, is the residual product of the Solvay towers after the bicarbonate of soda is secured. That 'recovery' of the ammonia, which is used over and over again, is made by the aid of lime, and the ultimate residue is therefore calcium chloride.

"In a very interesting address delivered by Dr. Ludwig Mond as president of the Chemical Section of the British Association in 1896, a description was given of an extraordinary ingenious process by which, with the aid of magnesia and potassium chlorine, instead of with lime, both the ammonia is 'recovered' as before, and the chloride is made available for use in the manufacture of bleaching powder. Elaborate though this process is, Dr. Mond said that it had fully attained his object of enabling the ammonia soda process to compete, not only in the production of carbonate of soda, but also in that of bleaching powder, with the Leblanc process. At the same time, he added that he had hesitated to extend the new process as rapidly as he would otherwise have done because of the possibilities involved in the processes lately developed for the production of chlorine by electrolysis.

"At that time no electrolytic process for the production of chlorine was in commercial operation in this country, and it was, perhaps, not firmly established anywhere else. Now, however, the electrolysing of brine or of potassium chloride, with the result that chloride and caustic soda or caustic potash are understood to be immediately available, is carried on to such an extent in Germany that more than all the demand for bleaching powder in that country is met by electrolytic works. Indeed, a large quantity is already exported, some even into England.

"Further, within the last year or so an electrolytic works has been started at Weston Point, near Runcorn, on the Mersey, which is undoubtedly producing bleaching powder in substantial quantity, and which, in December, 1897, forced down the prices by about a pound a ton below what, without its intervention, would have been the current rates. Permission to see the Weston Point Works was refused me—an

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experience almost solitary in the course of my enquiries on behalf of *The Times*—the firm saying that they were extending their plant, that their works were in disorder, that all other applications have been for the present refused, and that I should be welcome next summer. That being so, I cannot attempt any account of the electrolytic process there conducted.

"At St. Helens an electro-chemical works is in operation and, I am told, is producing bleaching powder, chlorate of soda, and caustic soda.

"There are also other electrolytic processes, such as the 'Hargreaves-Bird' and the 'Rhodin' processes, the development of which in this country is believed to be a matter of the near future.

"Speculation as to their future is fascinating; but I do not feel able to say more than that, while they may produce the chemical results desired with singular directness, the question of their commercial success must depend upon the frequency with which essential parts of the plant have to be renewed, and that upon that point very few persons are as yet in a position to form a judgment.

"The same remark applies to an extremely interesting electrolytic process invented by Dr. Hoepfner, which I had the privilege of seeing at Messrs. Brunner, Mond's, where it has only recently been brought into operation. It is led up to by utilising the calcium chloride—which has been mentioned as the present ultimate residue in the ammonia-soda process—for the production, with zinc oxide, of chloride of zinc in solution. The solution of zinc chloride is run into cells, through which an electric current is passed, with the result that the zinc is deposited in a chemically pure state on iron plates, from which it is subsequently removed and then melted and run into ingots, and the chlorine is drawn off to be utilised for the production of bleaching powder.

"The future of the trade is full of interest, but few, even of the most learned, will venture to forecast it with any confidence."

The Esparto Trade.

Messrs. Ide and Christie, in their monthly circular for April, report:—There has been little pause in the demand for new contracts, although a slight lull has occurred in the enquiry for African, chiefly from the fact that the majority of the large buyers have concluded their engagements. With the beginning of the present month the movement of business shifted to Spanish, and a large and wide-spread enquiry has been experienced for new crop contracts, and an important business concluded. Sellers have maintained their quotations with considerable firmness, and the general range of prices paid have been materially above those current a year ago. Importations of all kinds during the past month have been large, and all four descriptions have contributed to swell the total, which, however, was seldom greater than consumers were prepared to take delivery of against existing contracts. While the quarter's figures are slightly below those of last year, it will be noticed that the twelve months' import is well maintained, thereby testifying to the steady consumption of this commodity, notwithstanding the almost overwhelming quantities of wood pulp that came to hand. The heavy receipts of the past month show that steam tonnage has been fairly abundant, and rates of freights such as to induce shippers to move supplies homeward rather in advance of contract engagements.

Spanish arrivals have been full, but the quarter's statistics show only 17,852 tons against 21,221 in the first three months of last year. There have again been frequent enquiries for single cargoes for early shipment, but only in rare instances has it been possible for shippers to respond to them. In new crop business, however, there has been a large extent of dealing. Several of the big consumers of the north have closed for the bulk of their requirements down to the middle of next year and beyond, and sellers have had little difficulty in establishing a range of prices which mark a rise of about 7s. 6d. per ton on those quoted last spring.

Algerian has likewise been in fairly full supply, although somewhat less than in February. The total of 24,852 tons received in the three months is, however, 4,000 tons above the corresponding period of last year. The enquiry has slackened in face of the firmer attitude of sellers, some of whom anticipate that a considerable advance may be established should the firmness of Spanish be maintained. Already a fractional rise has been recorded, and there is undoubtedly a steadier tone in the market both for near and deferred delivery.

Tunisian has again been a large arrival, and brought up the quarter's receipts to 8,770 tons, or more than double those of last year. Some of the Mersey arrivals have scarcely given satisfaction on account of quality, and a certain proportion of the import there has gone into store, having been brought home slightly in advance of consumers' requirements. The enquiry has become quiet, and little new business is reported.

Tripoli arrivals, although full, compare unfavourably with the gigantic receipts of March, 1897, and thus the three months are nearly 5,000 tons short of last year—10,263 tons against 15,104. There has been a moderate business carried through for distant shipment, but sellers are now inclined to pause, and do not press offers on the market.

The following is an official summary of esparto arrivals at all U.K. ports during past month:—

London	2,990 tons	Cardiff	595 tons
Liverpool... ...	3,528 ,,	Manchester ...	535 ,,
Fleetwood ...	1,246 ,,	Glasgow	825 ,,
Aberdeen... ...	2,887 ,,	Dundee	865 ,,
Kirkcaldy ..	172 ,,	Bo'ness .. .	1,945 ,,
Grangemouth ...	1,138 ,,	Granton ...	2,710 ,,
Leith	403 ,,	Tyne	60 ,,
Sunderland ...	2,604 ,,		

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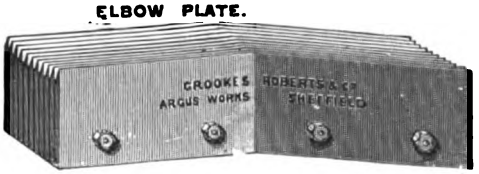

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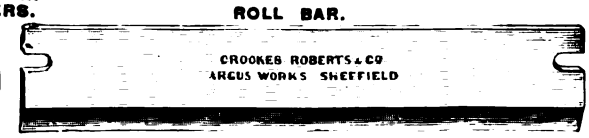
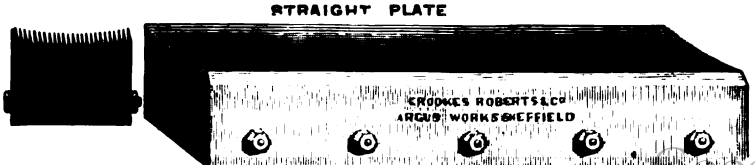


CIRCULAR CUTTERS.

STRAIGHT PLATE



☛ EVERY DESCRIPTION OF TOOLS USED BY PAPERMAKERS. ☚

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STRAINERS.

Several improvements (the subject of a patent) are claimed in pulp strainers by Mr. A. L. Westwood, of Edinburgh. The essential feature is the imparting of a rotary motion to the strainer plates of the class of strainers, in which the plates are ordinarily fixed in a horizontal position whereby the working surface of the plates is moved under the wash of the pulp flowing on to be strained, and thereby kept clear of refuse matter which is discharged to the edges of the plates and into a channel.

Fig. I.

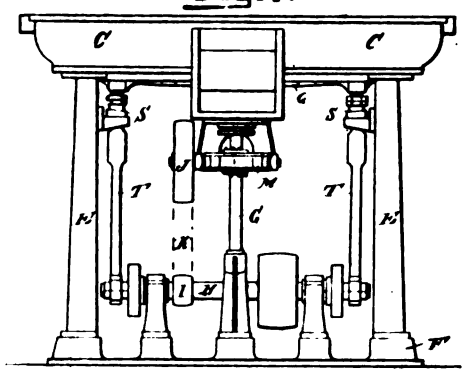

Fig. II.

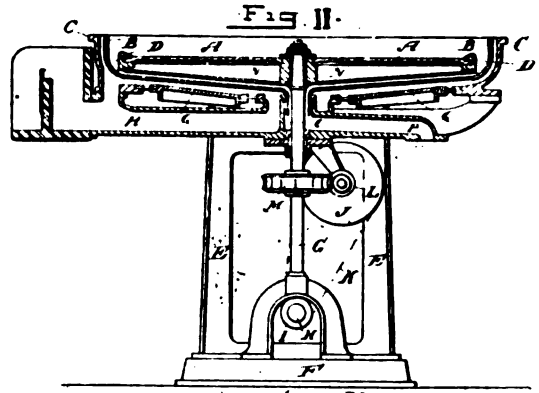

Fig. IV.

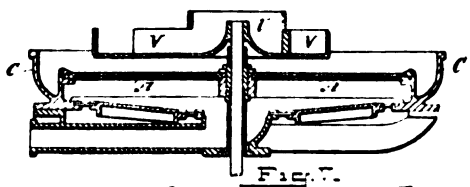

Fig. V.

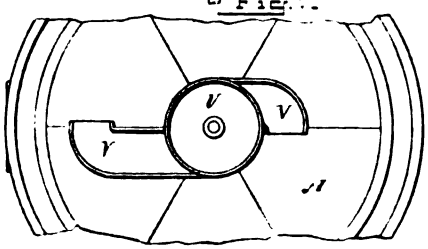

Fig. III.

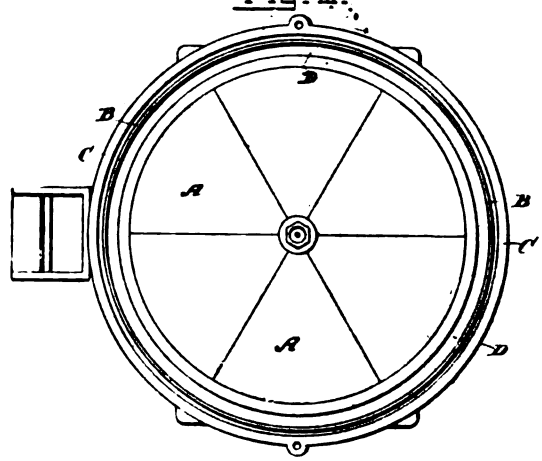

Figure 1 is a side elevation and Fig. 2 a sectional elevation at right angles to Fig. 1, and Fig. 3 is a plan. Figure 4 is a sectional elevation, and Fig. 5 is a part plan, of a modification of the invention.

The strainer is preferably circular, Figs. 1, 2 and 3 and the plates A are fixed in a frame B which rotates about a vertical or slightly inclined axis in a vat C and is formed with a refuse channel D at the periphery of the plates. The vat C being supported by upright standards E from the sole plate F. The said plate carrying frame B is supported on the conical head of a vertical spindle G [which admits of its being raised out of the vat for cleaning], and is rotated by any convenient gearing from below, such as by the horizontal shaft H which operates the pulsating diaphragm. The shaft H has a small pulley I keyed upon it which drives a larger pulley J immediately above it by means of a driving belt K. The pulley J operates a worm L, which is engaged with a worm wheel M keyed upon the spindle G. The plate frame B is fitted with pipes N which drain the refuse from the channel D into the cup O at centre, from which it is discharged by the pipe P to the auxiliary strainer in the usual manner. The pulsating diaphragm Q is of cast iron or other metal, and its inner periphery is connected to the cup shaped portion of the strained pulp discharge pipe R, through the medium of an indiarubber or other ring, the outer periphery being elastically connected to the inner periphery of the vat C in a similar manner. The diaphragm is supported by springs S and made to pulsate by means of rods T fixed to it and jointed upon small-throw cranks, on the rotating shaft H in the usual manner or by cams or eccentrics as may be found most convenient in practice.

The mouth of the onflowing pipe of the pulp to be strained (not shown) may be of such a width as to cause a wide flow of pulp

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on to the strainer plates, or the discharge mouth may be divided into two, three or more contracted mouths. As the pulp rushes from this pipe on to the plates between the centre of their rotating axis and their periphery and against the direction of the rotation of the plates, the refuse already on the plates is arrested by the flow and diverted to the periphery of the plates and into the discharge channel and pipes to auxiliary strainer. The strained pulp is led away by the pipe R, which is attached to the port in vat and is formed with the cup shaped centre O fitted with stuffing boxes and glands. A regulating box is fixed to pipe outlet as usual to regulate the level of pulp.

In lieu of a continuons rotation of the plates the motion may be intermittent, that is to say the plates may be given a motion say, in one direction and then a motion in say an opposite direction, by any convenient mechanism, such as by a lever arm attached to spindle G and actuated by a rod jointed to it and to a crank or cam on a separate vertical spindle which spindle would be geared from H by similar gearing to I, J, K, L, M. Or the plates A may be stationary as in figures 4 and 5 whilst the shute or shutes V are moved over the plates either in continuous rotation ; or any motion may be given, such as a to and fro motion as already described.

In this modification the clean pulp is discharged by the pipe R as already described, and the refuse pulp by a branch pipe (not shown) from refuse channel in vat to auxiliary strainer in the usual manner. In this modification the pulp is supplied from over-head into a basin or cup U which forms the centre of the shutes, and delivered from the sides or ends or bottom of the shutes V on to the plates as may be found best in practice, so that the rush of the pulp more or less completely washes or cleanses the whole surface of the plates A. The patentee claims that under all the various modifications the essential feature is the same, namely, to both strain the pulp and wash or cleanse the plates in a continuous action so as to at once get rid of the impurities and give a cleaner pulp as well as a more regular discharge from the machine.

A PAPER MILL EMPLOYEE'S MARRIAGE DOWRY.—A young Cardiff couple are the first recipients of Lord Bute's marriage dowry, the selection being made by the mayor. The young lady is a nursemaid, and the prospective bridegroom is engaged at a paper mill. They declared they had been unable to save sufficient means to provide a home, and were averse to going into debt and living in apartments. They are described as highly respectable, industrious people, and are to be married to-morrow (Saturday). The dowry is £1,000, the couple being entitled to the interest.

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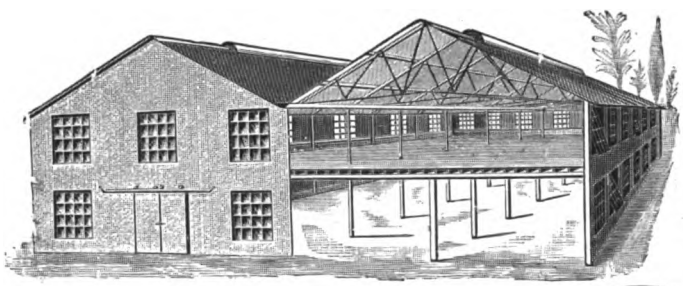

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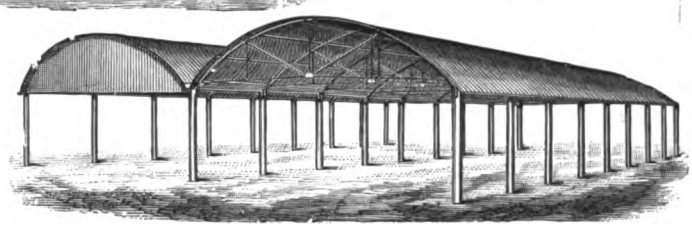

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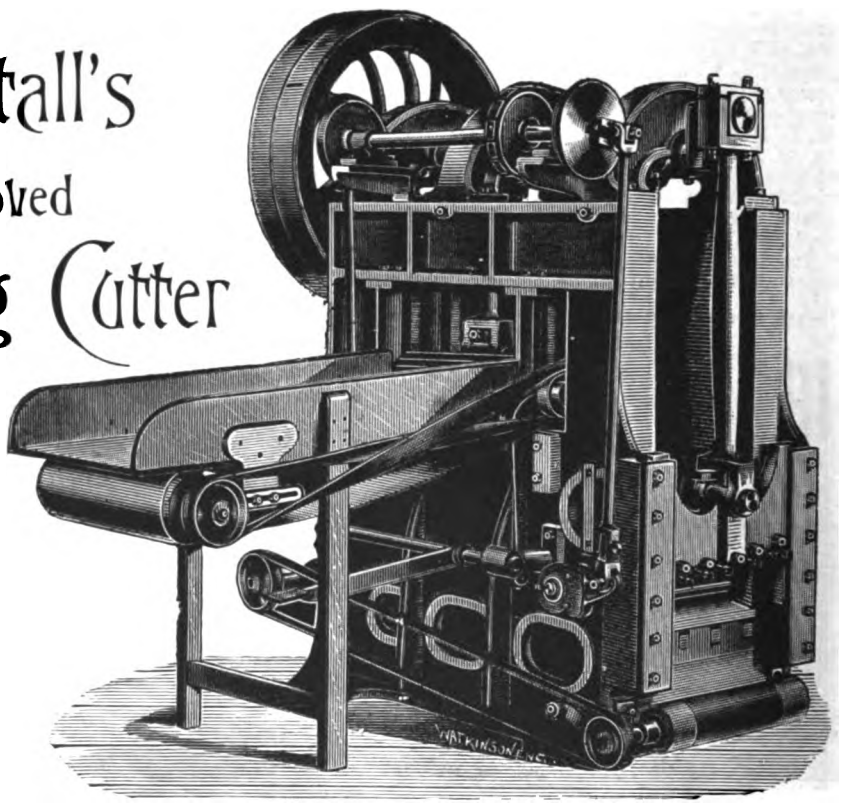

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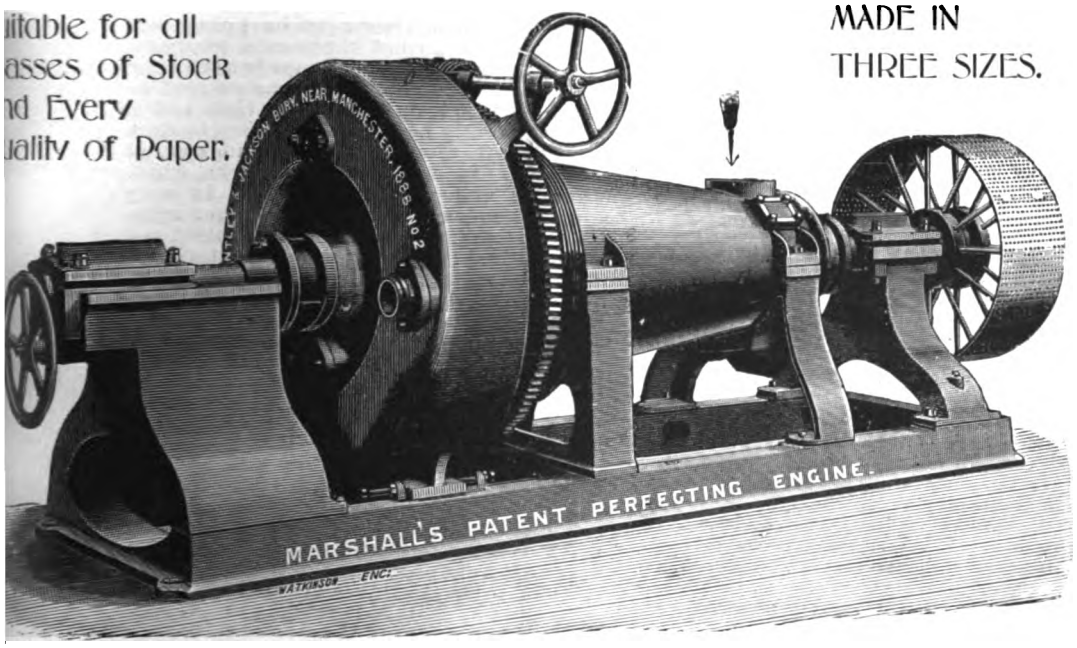

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THE ECONOMICAL USE OF STEAM

IN THE

MANUFACTURE OF PAPER.*

BY CHARLES E. EMERY, PH. D.

(Concluded.)

For these various reasons it is recommended that the siphon system be not adopted when it can be avoided. The well-known scoop method is much preferable, as the water in flowing around as the cylinder revolves will enter each scoop as it passes, be lifted above the centre and run out of the trunnions to the return pipes. Exterior siphons may be used on the connections to allow for slight differences of pressure, as is common in connecting the risers of steam heating apparatus.

It is surprising how large a quantity of steam at high pressure can pass through a small fissure opening into the atmosphere. Frequently minor leaks are neglected, whereas if there be any considerable number of them they will increase to a perceptible degree the cost of the steam power. It is essential, therefore, that repairs be carefully looked after, and that no steam leaks be permitted. The pipe coverings, moreover, should be kept in good order so as to avoid direct waste of heat by radiation.

We may be expected to say a word in relation to that great auxiliary of steam and water power, viz., electricity. It is easy to be too sanguine on the subject. This unseen force can do so many things in such an excellent manner that those who have not had extensive experience with it imagine at times that it is a cure-all for difficulties and the acme of modern progress. Let us impress upon you that for all ordinary purposes electricity is a luxury. Still we Americans like luxuries and can afford them. No gentleman who has made a fortune would consider his house perfect without electric lights; modern office buildings cannot omit them, and in some branches of manufacture electric lights are so much superior to any other method of lighting that questions of relative cost are of no importance in comparison with superior results. Moreover, ample water power may be available so that the cost will be greatly reduced. If, however, it be decided to put an electric plant in a paper mill, never buy the cheapest. The danger from fire due to improper work cannot be neglected. In every manufactory, and particularly in the moist places about paper mills, the wires should be erected only in iron or steel pipes with tight joints, and everything else should be made to correspond.

Local electric transmission has its advantages where the points at which power is to be delivered are widely separated, and it is practicable by means of high tension electric currents to transmit power, for instance, from a waterfall for long distances, utilising at the end of the line generally more than one-half the theoretical power of the water. Where water power is cheap and abundant this is desirable, as the annual cost will only be the interest on the installation added to the cost of maintenance. Under other conditions hold fast to what you already know to be good.

The speaker has at some length gone over: first, the general principles which have an important bearing on the uses of steam in the manufacture of paper, together with illustrations calculated to excite interest in the general subject. He has then endeavoured briefly to point out the care necessary in relation to certain details of operation. He would, in conclusion, plagiarise a well-known sentence to the effect that "eternal vigilance is the price of"—economy. In the operation of any steam plant the regular routine duties of the engineer are sufficient to keep him occupied, and it is with the greatest difficulty that he is prevented from falling into a sort of routine in regard to matters which must be attended to, to keep the mill in operation, so that he does not worry in relation to features which seem to be going well and therefore do not threaten a stoppage.

In a large steam plant it pays to have some one to look after details who has no routine duty, but who is on duty all the time and is of a sufficiently nervous disposition to drop in and look after matters at unexpected moments. In our previous remarks, which we have endeavoured to clothe in very simple language, there will be found references to a number of details which need not so much frequent attention as repeated oversight, no matter how well everything appears to be working. The economies may not be large in individual instances and yet be of great importance in the aggregate.

We may assume that any engineer with proper self-respect and not tied down too much to routine from lack of reasonable assistance will have a pride in seeing that his machinery is kept clean, that it operates noiselessly, that leakages are stopped, and in a word, that everything is kept in apparent good order. He will also satisfy himself during the hours of stoppage that pistons and valves are tight and that the boilers are kept free from scale and the soot and ashes cleaned from the tubes of the boilers and economisers. All these things are of great importance, most of them are matters of observation by the proprietors and fix the character of the engineer, but there is one point which we have left to the last, because it is the most important. It is to carefully look after the firing. Here the great waste in a steam plant occurs continuously. A corps of young engineers from the technical schools can come to almost any plant, post men here and there to take observations, and without the slightest interference with any of the practical details of operation report results which the proprietors by careful comparison will find, nine times out of ten, show a consumption of coal per pound of product 15 per cent. to 25 per cent. less, during the

* A Paper read before the American Paper and Pulp Association.

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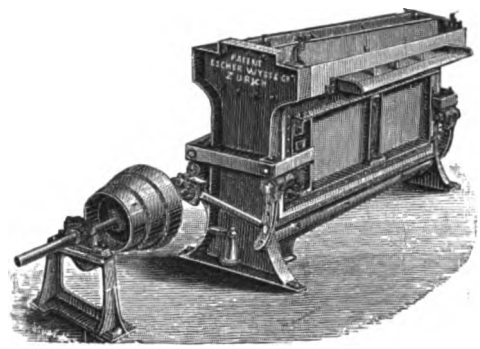
time the experiments were in progress, than the average shown by the books for a long period of regular operation. This will occur when no part of the machinery has been changed, when the rate of production is the same as the average and the coal of like quality. The difference must then be chiefly in the way the firemen do their work. They know how to fire and will show their skill when there is a test in progress. If there were but a single boiler and it was somewhat difficult to maintain the steam pressure the fireman would have to show his skill continuously, but when there are a number of boilers, and particularly when there are a number of firemen, for one excuse or another more boilers will be put on than are required for the work; the firemen will, on opening the doors, make the fires considerably heavier than necessary, thereby saving themselves the trouble of firing more frequently and with more care. Holes will burn in the fires of some boilers, allowing cold air to go through. Some of the firemen, and probably the best ones, will let their fires get into a condition of inactivity so that they will not require much coal, and the green firemen therefore will have to work harder to keep up the pressure. There are scores of details of this kind which there is no time to mention, but which any intelligent practical engineer already knows, or should know, and take steps to prevent.

We will only take up one more point. Frequently steam plants, not necessarily those of paper mills, have from long use become run down in some details, or they have been built up piecemeal, so that different parts designed for the same purpose do not operate co-ordinately. Pipes have been connected with a multitude of turns and fittings which ought to have been straight. A number of engines or a number of pumps are employed where one would be more economical. Boilers of different types are yoked together on the same stack with different percentages of heating surface in relation to the flue openings, so that one set does not perform the work it should and another is overloaded. In such establishments the saying is well exemplified that "a fire would be a blessing," as it would then be necessary to reconstruct, and it would possibly be done on a proper scale and in the proper way. Electric railway cars have their advantages, but it is not all due to electricity. In order to put in the new system the old tracks have had to be thrown to the winds and everything done in a better manner. It is our experience that in many manufactories a general change would be for the better, generally for the reason that work has been started on too small a basis and continued in what may be called an economical but in fact an illiberal spirit. In making improvements so much remains that is good that proprietors do not have the moral courage to build new from the foundations. It is, however, a fact that it is not always necessary. There is no infallible rule, even in mechanics. People must get away from the humdrum of everyday life once in a while, see what others are doing, hear what others have to say, and then determine for themselves, as they would for another individual, what it is for their best interest to do, and to do it. Meetings of this character are in line with our suggestions, which we trust have proved of interest and may, when studied in detail, be considered of value. We thank you for your very kind attention.

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



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WORLD'S PAPER TRADE REVIEW,
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

THE STATE OF TRADE.—According to the labour correspondent of the Board of Trade employment is scarcely so good in the paper trade, the percentage of unemployed union members at the end of March being 3·7, compared with 3·5 for February and 3·0 per cent. in March last year.

MR. JAMES RAMAGE, a well-known papermaker in the United States, is on a visit to Europe. He will spend a month or two in Scotland, his native land.

JAMES MILNE AND SON, LTD.—The directors' report for 1897, which has just been adopted, recommended that the following dividends be declared:—On the preference shares 6 per cent. per annum, on the ordinary shares 6 per cent. per annum, on the deferred shares 20 per cent. per annum. The balance of profit, amounting to upwards of £1,700, remaining after payment of these dividends, is being carried forward to the current year. The reserve fund has this year been increased to £7,187 10s. over and above the amount carried forward.

PRESENTATION TO MR. T. ALLEN MARSHALL.—An interesting event recently took place at the Campbell Works, Stoke Newington, N., the employees of the old-established firm of dandy roll makers—T. J. Marshall and Co., Ltd.—taking advantage of the 50th birthday of the senior partner, Mr. T. A. Marshall, to make him a presentation. It took the form of a solid silver salver, handsomely engraved, bearing the following inscription:—"Presented to T. Allen Marshall, Esq., as a token of esteem by the employees of Campbell Works, on the occasion of his 50th birthday, 12th April, 1898." There was also presented to Mr. Marshall a silver cigarette case. The partners (Messrs. T. A. Marshall and C. D. Marshall) thoroughly identify themselves with the interests of their workpeople, and it is pleasant to find that the latter thoroughly appreciate the good feeling and consideration shown. It may be mentioned that T. J. Marshall and Co. are the oldest-established firm of dandy roll makers, dating back three generations, and some of the hands have been with the firm between forty and fifty years.

WILLIAM BOULTON, LTD.—Registered with a nominal capital of £30,000 in £10 shares, to acquire the business carried on by W. Boulton, at Burslem, Staffordshire, to adopt a certain agreement, and to carry on the business of ironfounders, engineers, tool makers, brassfounders, metal workers, boiler makers, etc.

CAMERON, HASTIE AND CO., LTD.—Registered with a nominal capital of £2,000, in 140 ordinary shares of £10, and 30 founders' shares of £20 each, to manufacture, sell, and deal in silicate cotton and other non-conducting coverings for steam boilers and steam pipes. The number of directors is to be not less than four, nor more than seven; the subscribers are to appoint the first. Qualification, £100. Remuneration as fixed by the company.

DICK'S ASBESTOS CO., Canning Town, advise us that they have taken offices at Nos. 51 and 52, Fenchurch-street, E.C.

BELL'S ASBESTOS CO. announce a dividend of 4 per cent. for the past year, carrying forward £2,338.

ST. NEOTS' PAPER MILL CO., LTD.—The *St. Neots Advertiser*, of April 16th, mentions that "Messrs. Ennals Bros. sold by auction at the Corn Exchange, on Thursday, last week, a number of shares in local companies by direction of the executors of the late Mr. John Sexton, among which 50 £5 shares in St. Neots Paper Mill Co., Ltd. (£4 paid), realised as follows:—Mr. J. Hall, 20 at 5s. 6d.; Mr. G. Sexton, 10 at 7s.; Mr. Flown, 20 at 6s. 6d." About a year after the company was formed some shares (£3 15s. paid) were sold, and realised £5 each. The depreciation since that date is very noteworthy.

THE GROVE CHEMICAL CO., LTD., of Crown Glue Works, Appley-bridge, near Wigan, advise us of a change in their Manchester address. Their offices have been removed from 20, Cross-street, to 71, Haworth's-buildings, Cross-street.

EMPLOYERS' MUTUAL INSURANCE ASSOCIATION, LTD.—Registered with a nominal capital of £250,000, in £5 shares, to insure employers and others against liability to compensate servants and workmen or their dependents for injuries caused by accidents arising in the course of their employment, or otherwise, and to carry on all kinds of insurance, except life assurance.

THE 1898 edition of the "Annuaire de la Papeterie," a well known and much appreciated Directory of the French and foreign paper, pulp and cardboard making and handling trades, has just made its appearance. The present is the 31th year of its publication, and its size and importance continues to grow with each succeeding issue. So far as the French paper and allied trades are concerned, it is probably the best and most comprehensive work of the kind, whilst the mills in other European countries (including the United Kingdom) also find detailed mention, as well as those in other parts of the world. The value of this publication as a trade handbook is much enhanced by the very full tables, on matters of interest to our industry, which are included. A variety of technical articles on subjects of interest to the paper mill chemist, manager, proprietor, etc., likewise find place between its covers. To those of our readers who are acquainted with French we can confidently recommend it as a most useful and valuable book of reference. Copies (lg. 8vo. cloth gilt, post free 9s. 3d.) can be obtained through the publisher of the *World's Paper Trade Review.*

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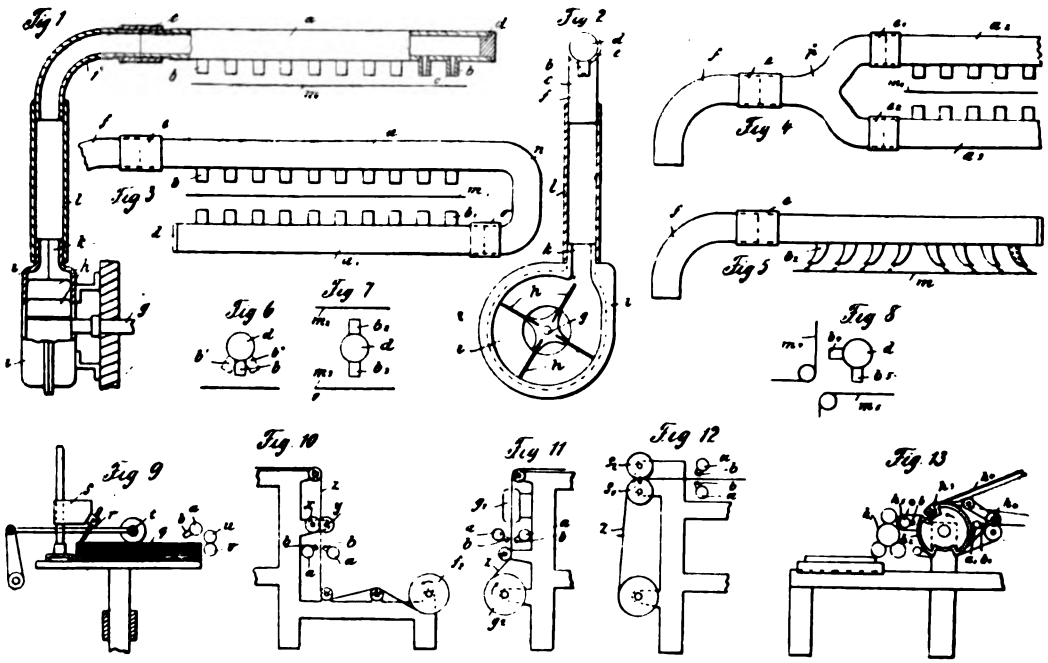
Removing Dust, &c., from Paper.

The papermaker frequently hears complaints made by the printer, and one is that hard particles in the paper sometimes damage fine process blocks. A German papermaker has lately taken out a patent in this country relating to an apparatus for removing dust or chips from webs and sheets of paper whilst being worked or manufactured in order to raise the quality of the work produced. The dust or chips arise on the papers from the several mineral substances admixed thereto from loosened particles of fibre or pulp, etc., but especially by their being worked by scoring, scratching, perforating, cutting, severing, etc.



The apparatus essentially consists of a tube or tubes provided with discharging nozzles for compressed air supplied to the tube or tubes by any convenient means, say, by a ventilator or an air-compressing pump, or from a reservoir containing compressed air and communicating with the tube or tubes, which are loosely connected to the stationary air-supplying device, in order to allow of their being conveniently disposed and arranged in any machine and turned on their axis.

In the accompanying drawings, Figs. 9 to 13 show the invention applied to certain machines.

Referring to Figures 1 and 2 a tube *a* closed at one end by a plug *d* carries spouts or nipples *b* provided with conical bores and preferably grooved at *c*, the said grooves being parallel to the axis of the tube. The tube is held in position by any convenient means say, by arms or brackets fixed to the framework of the machine to be supplied with the apparatus and loosely connected to a curved tube *f* by a screw box *e*. There are wings *h* mounted, on a fast revolving shaft *g* of the machine, and a casing *i* provided with central openings is fixed to the frame encasing the said wings, thus forming together with the same a ventilator of well-known construction. The discharging end *k* of the latter is connected to tube *f* by a coupling hose *l*.

When running the machine, the compressed air will be discharged through the bores of nipples *b* and directed on the paper *m* passing underneath them blowing any dust off the paper. The grooves *c* thereby assist in laterally spreading the single streams of air, so as to strike the paper on a continuous zone extending throughout its breadth, and in consequence thereof the whole surface of the paper travelling underneath the tube *a*.

If desired to blow off the paper on both sides by only one apparatus the features represented in Figs. 3 and 4 may be made use of. In the former, Fig. 3, tube *a* is curved at its end *n* and connected by a screw box *o* to another tube a^1 provided with nipples b^1, and extending opposite to tube *a*. As the paper m^1 passes between both tubes it will be blown off on either side. In Fig. 4 the same object is attained by a forked tubular piece *p* connected to tube *f*, and carrying by means of screw boxes e^1, e^2, parallely extending tubes a^2, a^3, closed at their free ends.

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In Fig. 5 the discharging nipples b^2 are inclined to the axis of the tube, the discharged streams of air thus striking the paper m in an oblique direction, as indicated by arrows, and on the whole extent of its breadth. Besides this a continuous current of air will be produced, taking along with the dust towards the right and the left, and delivering it to a dust collector if desired. Instead of inclining one portion of the discharging nipples towards the right, and the other portion towards the left, it would be sometimes preferable to give all nipples the same inclined direction, and to blow off the dust towards one side.

By means of the coupling hose l, Fig. 1, tube a can be conveniently disposed and arranged in any machine, as the case may be, whilst the loose connection of tube a with the curved tube piece f effected by means of screw box e, allows of turning tube a on its axis in order to give the nozzles b the most convenient slope with respect to the surface and the course of the paper, as represented in Fig. 6 by the full line position b and the dotted line positions b^1 b^{11} respectively.

Figs. 7 and 8 show modifications of the invention, in which one and the same tube is provided with several rows of nozzles b^2, b^3 and b^4, b^5 respectively, in order to control several courses of paper m^2, m^3, and m^4, m^5 respectively by means of but one tube.

Fig. 9 shows a ruling machine provided with the apparatus. The quality of work in such machines is highly affected by the presence of dust on the sheets of paper, and so much the more when the sheets q are automatically fed to rollers u, v, by feed rollers t as represented and commonly, knives r fixed to heavy slide pieces s serving the purpose to retain the second and the following sheets when the uppermost sheet is withdrawn and cut on its edge by the knives. By the cuts there will be produced paper dust on the sheets, and the said dust is fully blown off by the apparatus a b placed above the foremost edge of the pile of paper q as the sheets pass underneath the apparatus their full length when fed to and withdrawn by the rollers u, v. As the feeding device represented, Fig. 9 is likewise applicable to printing presses, this figure illustrates at the same time an application to such presses.

Fig. 10 represents the apparatus applied to the cutting and rolling-up-device of paper machines. As the endless paper z by passing the circular knives x, y, is longitudinally severed in strips, paper dust will arise along the cutting lines, but blown off on either side of the paper by the nozzled tubes a b of the invention placed beneath the knives, so that the paper is fully cleansed when reaching the paper roll f^2 to be rolled up. In the present instance it would be preferable to make use of the feature, represented in Fig. 5, to blow off the dust from the middle towards the right and the left.

To papermaking machines, the patentee claims that his apparatus is of the greatest importance. For the usual circular knives of those machines do not produce a great deal of dust, but will preferably conglomerate the same by its peculiar working, so as to assemble flakes along the cutting lines retained thereto by afterwards damping the paper and causing waste on its edges by calendering. Another advantage in papermaking machines consists in that the paper is cooled at the same time by the blast of air, the cooling process thus being largely accelerated and improved.

In printing presses, Figs. 11 to 13, the quality of work essentially depends upon the cleanness of the paper, and the application of the apparatus is claimed to be very effective.

The U.S.A. Tariff.

The Board of United States General Appraisers has handed down the following decisions:—

17,310.—Cigarette paper from Braumstein Freres, Paris, January 18th, 1898. Muslin tissue paper, 20 by 30, entered at 90, advanced to 145 francs per 100 kilos. Embossing entered at ·25, advanced to ·50 francs per ream.

17,417.—Surface-coated paper, from Antoine Van Genechten, Turnhout, January 28th, 1898. Med. coul. wave Goldvein, Ant., entered at 35 francs per ream. Med. coul. wave antique, entered at 24 francs per ream; no advance. Med. fine Coco 531, 503, entered at 18 francs per ream; no advance. Med. fine Coco blue, entered at 23·5 francs per ream; no advance. Add cases.

17,396.—Drawing paper, from F. W. Zanders, Berg Gladbach, February 2nd, 1898. Chamois Zeichen, 91½ c.m., 36-inch ditto 106½ c.m., 42-inch and 142 2-10 c.m., 56-inch, entered at ·90, advanced to ·95 mark per kilo. Deduct freight to Rotterdam.

17,449.—Manufactures of paper, from George Borgfeldt and Co., Berlin, February 18th, 1898. Slate notes, 539, entered at 10·50, advanced to 10·75 marks per gross. Entered discount, 20 per cent.; advanced discount, 17½ per cent. Add cases.

A special hearing was also held before the United States Board of General Appraisers on the protests of the Farbenfabriken Company, of Elberfeld, Germany, on a consignment invoiced as alizarine colours and diamond black, which was assessed for duty by the appraisers under paragraph 15, Act of 1897, as coal tar colours or dyes, at 30 per cent. *ad valorem*. The importers, through their counsel, Dickerson and Brown, contended that the alizarine should be exempt from duty under paragraph 469 of the free list, which provides for "alizarine, natural or artificial, and dyes derived from alizarine or from anthracine." Diamond black, they claim, has the same properties as alizarine, and should likewise be exempt from duty. If, upon investigation, the articles in question fall within paragraph 469 of the free list they will be entered free of duty, and if not the duty assessed by the appraisers will be affirmed. Decision was therefore reserved.

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FRANCE.

IT is not often that a trade organ, avowedly run chiefly in the interests of a society of employers in a particular industry, results in a financial success, and thus it is with much pleasure that we record the satisfactory outcome of the fifth year's publication of *La Papeterie*, the official journal of the French Wholesale Stationers' Society. There is a net balance of over £80, to be handed over to the funds of the Society, and is largely due to the energetic and practical conductorship of Messrs. Ch. Lhomme and Falliot.

GERMANY.

THE WATER CALAMITY of last summer is by no means forgotten in Germany. Careful investigations are being made as to its origin, and measures are being considered to prevent repetition as far as possible.

THE VARZINER PAPIER FABRIK.—The business done there last year was considerable, for the turnover amounted to 1,497,205 marks. All repairs were paid out of current income. There were no losses, but a reserve fund is still open of 12,000 marks against such emergencies. The gross profits were 308,882 marks. A dividend of 12½ per cent. is paid.

AUSTRIA.

THE Austrian exportation of paper, etc., in February was as follows:—To Greece, 5,300 kilos.; Durazzo, 3,500 kilos.; Philippopoli, 20,000 kilos.; Salonica, 43,600 kilos.; and Sofia, 74,450 kilos. The contract for the Bulgarian State Printing Office (value about 200,000 fcs.) has been obtained by Austrian firms. It is stated that want of enterprise in export business is the chief cause of the stagnation of Austrian trade, and this is to be remedied by the erection of a high school of merchants, where geographical, statistical, and technical subjects will be treated.

UNITED STATES.

THE mill of the Moosehead Pulp and Paper Company, Solon, Me., which has been closed for a year, is to be started up. The machinery has been repaired and put in first-class condition.

THE MINSI PULP AND PAPER COMPANY, New York, has been incorporated to operate at Minsi, Pa. Directors: Messrs. W. J. Smith, J. H. Deery and Abraham Chilcott. Capital stock, 75,000 dollars.

TO EXTEND AMERICAN TRADE.—In establishing a sample warehouse for American goods in Caracas, Venezula, the National Association of Manufacturers is developing an idea which is calculated to be very effective in the extension of American trade. The primary purpose of this warehouse is to bring buyer and seller together, to show actual merchandise to intending purchasers, and to let the manufacturers know the peculiar wants of the buyer. It is intended that the warehouse shall be in charge of a sufficient number of competent men to give attention to the interests of exhibitors. Recognising that very few men could be found of sufficient breadth of experience to qualify them to give intelligent attention to the wide variety of goods, the association has adopted the plan of grouping such exhibits as might naturally be allied in character, placing each group in charge of some man experienced in that line of business.

THE AMERICAN papermakers complain of depressing effects owing to the war scare, publishers hesitating to place orders ahead.

RAGS were imported at New York during March to the extent of 7,614 bales. During the first quarter of the present year rags were received as under:—From Glasgow, 89 bales; Hull, 1,589 bales; Liverpool, 182 bales; London, 844 bales; Antwerp, 3,575 bales; Bordeaux, 529 bales; Bremen, 1,384 bales; Copenhagen, 444 bales; Dunkirk, 164 bales; Hamburg, 2,566 bales; Havre, 62 bales; Marseilles, 80 bales; Rotterdam, 774 bales; Stettin, 503 bales; Alexandria, 724 bales; Genoa, 858 bales; Hiogo, 2,371 bales; Kobe, 3,750 bales; Leghorn, 1,200 bales; and Yokohama, 1,500 bales.

OLD PAPERS were imported at New York during March to the extent of 193 bales. During Jan.-March supplies were from the following ports:—From Glasgow, 708 bales; Hull, 15 bales; Liverpool, 92 bales; and from London, 652 bales.

MANILLA STOCK was received at New York last month to the amount of 18,172 bales. The imports during Jan.-March were as under:—From Bristol, 496 bales; Dundee, 775 bales; Hull, 2,773 bales; Leith, 978 bales; Liverpool, 1,752 bales and 260 coils; London, 1,233 bales; Newcastle, 782 bales; Antwerp, 5,595 bales; Bremen, 55 bales; Hamburg, 1,089 bales; Havre, 986 bales and 150 coils; Rotterdam, 801 bales; Stettin, 307 bales; Calcutta, 11,221 bales; Genoa, 915 bales; and Leghorn, 237 bales.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included:—To London, 1,591 packages and 1 case; Liverpool, 573 packages; Manchester, 226 packages; Hull, 52 packages; Dundee, 74 packages; Newcastle, 96 packages; Bristol, 50 packages; and Glasgow, 1,335 packages. Shipments to Antwerp amounted to 10 packages; Bremerhaven, 16 cases; Bremen, 1 case; Havre, 36 packages; Hamburg, 316 packages; and Rotterdam, 4 packages. Consignments to Australasia, 59 packages; B. Guiana, 10 packages; Africa, 31 packages;

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Brazil, 479 packages; B. Honduras, 38 packages; B. W. Indies, 1,444 packages; Japan, 6,947 packages; Mexico, 263 packages; and Newfoundland, 29 packages.

HOLLOW PAPER BRICKS.—The use of paper in the manufacture of high grades of bricks for interior housework, house trimmings, facings and for decorative purposes is evidently much on the increase. Already some very good samples of enamelled paper brick have been shown. In the latest process of making and enamelling the paper bricks the bricks are made on the hollow principle. The object of making the brick hollow is practically the same as sought in the making of hollow forged steel shafting. Not only is a defective centre removed, but it is possible to put a mandrel into the hollow, and by applying pressure the walls are operated upon both from the inside and the outside. When a solid body is heated the temperature of the interior always varies from that of the outer portion at first, often resulting in an expansion of one or the other that causes defects. For these reasons the plan of forming the bricks upon the hollow principle, plugging them afterward, is recommended. Sawdust is found to be a good filler. It is first fireproofed, as is also the paper pulp used in the bricks. Then it is mixed with cement and pressed into the hollow of the bricks, smoothed and enamelled over, making a perfect shape.

—o—

MEXICO.

TRADE MARKS IN MEXICO.—The Minister of Fomento has just presented to the Congress of the Republic a Bill introducing certain changes in the law now in force concerning trade marks. Hitherto, as per article 4 of the present law, foreigners could not register a mark in Mexico, unless they had an office or agency there. In future—when the proposed changes have been passed—the owners of foreign trade marks will no longer be compelled to appoint an agent or representative in Mexico in order to have their marks registered.

German Paper and Pulp Industries.

Report of the Chemnitz Chamber of Commerce.

In reviewing last year's trade, the Chemnitz Chamber of Commerce reports that the trade in wood pulp, wood pulp boards, and leather boards was not unsatisfactory, although the water calamity caused great loss to many factories.

At the present time the competition of Austria, Scandinavia, and Finland is severely felt, not only in the world's markets, but also in the German home trade. Boards especially have gone down in value, so that one can scarcely speak of a margin.

Export prospects are unsatisfactory. The inland consumption fortunately increased and absorbed previous stocks. The price of raw wood for grinding purposes has gone up again considerably.

Paper mills were fairly busy, particularly during the first six months of last year, when orders were very plentiful. The prices obtained, with a few exceptions, were unsatisfactory, particularly in the cheaper sorts and news.

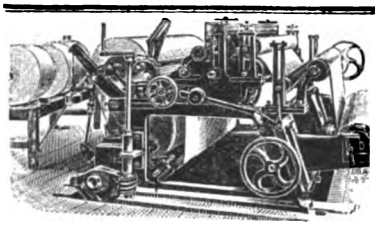
Scandinavian and American makers are responsible for competition in the world's markets.

The surface paper trade was upon the whole good, but there is a complaint about price-cutting. The fancy box trade was brisk.

THE WORLD'S PAPER TRADE REVIEW.

CONTINENTAL OPINION of the WORLD'S PAPER TRADE REVIEW: "I take this opportunity to speak out that your Journal has NO EQUAL of its kind in all countries.—I remain, yours faithfully, M. BEHREND. Prince Bismarck's Paper Mill, Varzin, Germany.

THE WORLD'S PAPER TRADE REVIEW, the leading European exponent of the paper trade.—*American Paper Trade and Wood Pulp News.*



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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

THE wood pulp market in Norway and Sweden is fairly firm. There is more enquiry for mechanical, and quotations show very little fluctuation.

NEGOTIATIONS for the purchase of timber lands in Norway by an English Syndicate are proceeding satisfactorily, and definite particulars may shortly be made public.

ACCORDING to the report of an English expert the site is especially well adapted for the erection of chemical and mechanical wood pulp mills, and the attention of British papermakers is being directed to the undertaking.

THERE is some talk of the Bergvik Co., Ltd., again taking up the manufacture of sulphite wood pulp. This company were the owners of one of the pioneering mills in Sweden, but the mill was shut down some years ago owing to obsolete plant.

A TRADEMARK associated with sulphite wood pulp largely imported into Great Britain is that identified as H S, covering the product of the Storviks Sulfit Aktie Bolag. This concern has introduced many improvements in manufacturing operations, with the result that the output is noted for its strength and reliability. The sole agents for Great Britain are Messrs. Henderson, Craig and Co., Ltd.

SULPHITE manufacturers in the United States feel that in the event of war between America and Spain their industry will suffer severely.

DURING the opening months of the year the demand has been exceptionally good, but it is expected if there is a fall in the demand of paper, there will be less demand by United States papermakers for raw materials generally.

A POINT is made of the fact that, as 95 per cent. of the sulphur used in the manufacture of sulphite in the United States comes from Sicily, the pulp mills are likely to suffer in the event of hostilities, because of the likelihood of sulphur being considered contraband of war, in being used in the manufacture of gunpowder and other explosives.

FUTURES are advancing for sulphur, and the market in Sicily is very firm.

THE Sulphur Syndicate are now asking 22 dols. to 23 dols. a ton for the best unmixed seconds delivered in New York and Boston as against 20 dols. a ton, the price six weeks ago. It is argued that the demand, augmented by the fear of a war and a wish to stock up for possible contingencies, has brought about this advance.

A WAR with Spain would also have its effect upon the American export business. Of late, however, very little sulphite has been received at European ports from United States.

IT will interest Scandinavian manufacturers to know that previous to the war scare the local demand for American sulphite was so great that several well-known people in the trade predicted a shortage of supply.

ONE well-known manager of an American mill, in a communication to the *World's Paper Trade Review*, said that in his opinion "we shall have to import within twelve months."

"NEARLY, if not all, the available location for sulphite mills from which a sufficient supply of timber can be relied upon, have been," writes our correspondent, "taken up, as the spruce belt in this country is confined wholly to New England and the northern part of New York State."

THE increase in the home demand for American sulphite has sent up prices. Advices from Boston state:—"Sulphite fibre is moving in great style, the demand being very much improved, so much so that not only is the advance of five dollars a ton being maintained, but manufacturers are beginning to talk of even higher prices. A manufacturer of bleached sulphite reports selling his product at present at 3 cents a pound."

PROVIDING war does not break out, there is some talk of prices advancing to such a point before long that Scandinavian sulphite mills will be in a position to export to the United States.

DURING the first quarter of 1898 chemical fibre was imported at New York as under:—From Nova Scotia, 260 tons; Antwerp, 215 tons; Hull, 95 tons; Copenhagen, 40 tons; Rotterdam, 15 tons; and Stettin, 10 tons.

AT Liverpool and London during the past week several lots of American wood pulp, amounting to 5,477 bales and 260 rolls, were received from Portland, Me.

TO THE order of a London firm of wood pulp merchants wood pulp was received this week from Canada as follows:—2,490 bales per s. "Damara," from Halifax; 800 bales per s. "St. John City," also from Halifax; and 1,065 bales per s. "St. John City," from S. John.

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ANOTHER lot of Canadian wood pulp imported this week was 1,246 bales per s. "Mantinea" from St. John.

IT is reported that the Royal Paper Mills Co., Angus, Canada, intend building a suphite mill. The location of the proposed mill will be higher up the river than the present mill.

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FRIDAY, APRIL 22, 1898.

The Proposed Combination of British "News" Mills.

VARIOUS reports are being circulated as to the valuation of works, purchase price, etc., in connection with the proposed combination of the principal "news" mills of this country, but as stated in our last issue those associated with the undertaking have pledged themselves not to make public the particulars discussed at the various meetings that are being held in London, and therefore the statements published cannot be considered of a reliable nature. Several directors of our "limited" news mills are giving their influential support in favour of the proposed "combine," but there are so many matters to adjust that much time must necessarily elapse before the fruition stage is reached, and before definite and accurate information can be made public. Of course there are people in the trade who doubt a successful issue to the negotiations.

* * *

Foreign Competition.

THE keenness of foreign competition is an old cry, but British papermakers—some more than others—are seriously affected owing to the increase in supplies of foreign paper to the British market. The value for the first quarter of this year stands at £891,727, and no doubt taking the whole of the present year the value of the imports of foreign paper and strawboards, etc., will exceed three-and-a-half million pounds sterling. A feature of the past quarter's trade is that the value of the unprinted paper received from Germany, Holland, and Belgium shows a decline compared with Jan.-March last year. Large quantities of "unprinted" paper are received from Norway and Sweden, but the latter country only is mentioned in the official returns, the value of the supplies during the last three months being £93,602, an increase of £9,406 compared with the corresponding period of last year. The extent of the export trade of the United States with this country is not shown, but under "other countries" we notice a very large expansion in the value of "unprinted" paper imported, viz., from £192,773 for the first quarter of 1897 to £293,758 for the corresponding period of this year—an increase of £100,985.

* * *

American Paper Exports.

THERE can be no doubt that the Americans have largely increased their exports of paper to this country during the past year or two. When trade is dull in the United States, the British market is evidently cultivated more assiduously. The business has evidently grown to such dimensions that even with a good American trade it is hardly likely that exporters will readily relinquish their hold of this market. It will interest many of our readers to know that the exports of American paper during January — the latest period covered by the Treasury statistics— were of the value of 512,570 dollars. The value of the exports during January, 1897, was 26,582 dollars. Thus it will be seen that American exports of paper in January last were more than 96 per cent. greater than those of January 1897. The value of the exports during the seven months ending with January, was 2,127,121 dollars; value for the corresponding period a year previous, 1,675,193 dollars; gain, 86 per cent.

* * *

Canadian Trade.

THE business outlook in Canada is very promising. Papermakers are enjoying an increased demand for their product, and there is very little fluctuation in prices. At the present time there appears to be a cessation of American competition. It is felt, however, that Canadian mills turning out news must make extensive alterations in the near future if they wish to hold their trade. It will be imperative for them to put down the most modern papermaking plant, and here is an opportunity for British engineers. Existing mills will have to face a large output from the new mill of the

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Laurentide Pulp and Paper Co., which is expected to be ready for running about November next. It is understood, however, that the Laurentide Co. will chiefly cultivate an export trade.

* * *

British Manufactured Goods in France.

The prospects of British manufactured goods in France are discussed at some length in the last report of our Consul at La Rochelle, Mr. Warburton. The only change, he says, in regard to the sale of British goods is the continuous decline in the demand for them, owing to the increasing tendency to manufacture everything in the country in place of importing. Almost all the goods are now made in France of good quality and moderate price, "which is only what might have been expected bearing in mind the great advantages they possess for cheap production in much lower wages, longer hours of work, and absence of strikes or labour troubles; and as the number of manufactories increases competition is constantly lowering prices, so that in many instances, even if there were no protective duties it is doubtful if we could compete with them, or even make as cheaply as they are doing, now that they have got into the way of it." After referring to the low wages and long hours of labour, Mr. Warburton says it is the fashion to say that the work turned out is inferior, and that the workmen do less in an hour than our own; but he is informed the work is good, and the advantages of the superior strength and skill of the British workman are smaller than they used to be owing to the introduction of labour-saving machinery.

* * *

Finnish Competition in Russia.

THE modification of the customs tariff between Finland and Russia has greatly reduced the prices of Russian paper. Formerly Russian manufacturers were in an exceptionally favourable position, as they had divided the country among themselves, and never interfered with each other. As there was no over-production, prices could be kept high, and the import duty on foreign paper still allowed a good margin of profit on the home article. The worst accusation against the Finnish makers now is that they do not know the market sufficiently, sell too low, and cut unnecessarily against each other and Russian mills.

Stocks and Shares.

Very little business seems to be going on in the paper share market, as, like the other markets generally, things are rather unsettled at present. The "combine" companies seem to take almost the whole of the transactions recorded. North of Ireland are the most prominent, and mark a rise of ⅝ on the week, and seem very firm. Star are fractionally easier on selling orders. In others, Bergvik pref. are up ½, and Roach Bridge ⅛. Thomas Owen ord. are easier by ⅛ with sellers about. Burnley have again paid 10 per cent., and are now quoted ex-dividend (3s. 10½d. per share).

The chemical share market is somewhat easier again, and a most pronounced fall of ⅜ is noted in Bowman, Thompson ord., also ⅛ in pref. United Alkali pref. are rather easier, and debs. are down ½. Castner-Kellner have gained 1s. of their recent fall, and are firm about 21s. Brunner, Mond pref. are also ⅛ better, but with very little doing.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices
10	10	Bath Paper Mill Co. (Ld.)	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	12—13
3½	5	Burnley Paper Co. (Ld.)	10	6—6¼ x.d.
7	7	Bury Paper, ord. ,,	6	6⅞—6⅞
7	7	do. 6% pref. ,,	6	7⅛—7⅛
2½	3	Collin (Darwen) Paper ,,	nil	4/6—5/6
3½	5	Darwen Paper Co. ,,	15	8½—9½
10	10	E. Lancashire Paper Co. ,,	nil	8—8½
10	10	do. do. 6% pref.	nil	8½—9½
5	5	do. do. bonus	nil	4—4½
100	100	Ekman Pulp & Paper Co. Ld. debs.	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	7—7½
5	5	Hyde Paper Works Co. ,,	nil	1½—2
2½	5	Kelln'r-Part'gt'n P'p Co,,	15	7⅛—8⅛
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	104—108 x.d.
4	5	N. of Ireland Paper Co. ,,	12½	9⅛—9⅜
7	10	Olive Brothers ,,	10	7⅛—7⅜
1	1	Owen, T. & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
5	5	Peebles (A. M.) & Son ,,	8½	7⅛—7⅜
5	5	do. 5% cum. pref.	5	6½—6½
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	6⅞—7½
1	1	do. do. cum. pref.	5	1½—1½
4½	5	Roach Bridge Paper Co. ,,	10	5⅛—5⅜
5	5	Star Paper Co.	10	8⅛—9⅛
3	5	do. do. cum. pref.	10	6⅛—6⅜
10	10	Waterlow & Sons non.-cum. def.	—	14½—14⅝
		do. do. non.-cum. pref.	4	14½—14⅝ x.d.
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	7—7½
10	10	do. do. cum. pref.	7	10⅛—10⅜
100	100	do. do. debs. (red. 1904)	6	104—100
10	10	Brunner, Mond & Co. (Ld.)	20	41⅞—42
3½	10	do. do. "New" ,,	20	16⅝—16⅞
10	10	do. do. 7% pref. ,,	7	17½—18
5	10	do. do. do. new issue	7	8⅛—8⅜
1	1	Castner-Kellner Co. ,,	—	20/6—21/6
5	5	Clayton Aniline cum. pref.	6	5⅞—6⅛
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11⅜
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	28/—29/-
10	10	do. do. cum. pref. ,,	7	7⅞—8
100	Stock	do. mort. deb. (red. after 1901)	5	108⅛—108½

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester. Runcorn, Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams

Telegrams—"STONHILL, LONDON."

CHEMICALS.—The chemical trade is quiet and unsatisfactory. Prices are without material alteration. Shipments to the United States last month show a serious falling off compared with the corresponding period of last year. AMMONIA ALKALI stands at £4 5s., and SODA ASH £4 15s. for Carbonated and £4 17s. 6d. for Caustic. CAUSTIC SODA, White, 77 per cent. is quoted at £8 7s. 6d. to £8 10s., 70 per cent. £7 to £7 2s. 6d., and 60 per cent. £6 to £6 2s. 6d. SODA CRYSTALS are unchanged at £2 17s. 6d. f.o.b. Tyne. There is a steady demand for BLEACH at £5 5s. to £5 7s. 6d. for soft wood, and £6 for hard wood. SALT CAKE is obtainable at 20s. to 21s. per ton in bulk on rails, and RECOVERED SULPHUR is firm at £4 15s. to £5 per ton according to delivery. The market for ALUM is firmer, the quotations less 2½ per cent. being £5 5s. for ground in tierces f.o.b. Glasgow and £4 12s. 6d. for lump, in tierces f.a.s. Glasgow. SULPHATE OF ALUMINA stands at £4 5s. to £4 10s. ex warehouse.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½	5	5	0
,, ,, barrels	...	,, ,,	2½	5	15	0
,, ,, tierces	...	,, Hull	2½	5	8	6
,, ,, ,,	...	Goole	2½	5	2	6
,, ,,	...	f.o.b. Glasgow	2½	5	5	0
Alum Lump) ,,	...	f.o.b. Liverpool	2½	4	12	6
,, ,, barrels	...	,, ,,	2½	4	15	0
,, ,, tierces	...	,, Hull	2½	4	12	6
	...	Goole	2½	4	12	6
,, ,, ,,	...	London	2½	5	2	6
,, ,, ,,	...	f.a.s. Glasgow	2½	4	12	6
Alumina Sulphate	...	f.o.b. Tyne	net	3	11	3
Aluminoferric Cake, slabs		Liverpool ...	...	2	15	0
,, ,, tierces		,, ...	...	3	2	6
Alumina Cake, ... slabs		Glasgow ...	...	2	10	0
Blanc Fixe	...	f.o.b. Tyne	net	6	17	6
Bleach, ...	...	,, ,,	net	6	0	0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5	0
,, (hard wood)	...	f.o.b. Liverpool	net	6	0	0
,, (soft wood)	...	landed London	net	6	5	0
Borax (crystals) ...	...	... ...	net	14	10	0
,, powdered ...	...	... ...	net	15	0	0
Chloride of Barium	...	f.o.b. Tyne	net	6	15	0
Caustic White 76%	...	f.o.b. Liverpool	net	8	7	6
,, 74%	...	,, ,,	net	8	2	6
,, 70%	...	,, ,,	net	7	10	0
,, 70%	...	f.o.r. Lancs.,	net	7	7	6
,, 60%	...	f.o.b. Liverpool	net	6	10	0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5	15	0
,, 60%	...	f.o.b. Liverpool	net	5	17	6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4	12	6
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4	15	0
,, ,, 48%		,,	net	4	12	6
,, ,, 58%		f.o.r. Widnes	net	4	10	0
,, ,, 48%		,, ,,	net	4	5	0
,, Ammonia 58%		f.o.b. Liverpool		4	5	0
,, ,, 48%		,,		4	0	0
,, Caustic 48%		,,		4	12	6
,, ,, 57-58%		,,		4	17	6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5	0	0
,, 10-ton lots		ex ship Liverp'l	net	5	5	0
Oxalic Acid		f.o.b. Liverpool	3½	per lb		3
Salt Cake		on rail, in bulk		1	0	0
Sal Ammonia (1sts) ...		f.o.b. Liverpool		35	0	0
,, (2nds) ...		,,		33	0	0
Soda Crystals		f.o.b. Tyne	net	2	17	6
,, ,, ...		ex ship Thames	2½	2	17	6
,, ,, ...		f.o.b. Liverpool	5½	3	0	0
Sulphur, roll		f.a.s. works	2½	6	5	0
,, flowers		,, ,,	2½	7	5	0
,, recovered ...		,, ,,	2½	4	15	0
Sulphate of Ammonia ,,		,, ,,	2½	8	15	0
,, of Copper ...		,, Liverpool	5½	16	5	0
FOREIGN.—F.o.b. Continental port:						
Hypo-Sulphite of Soda 10-ton lots casks			...	4	10	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn				3	15	
Blanc Fixe (c.i.f. London)			...	7	0	
White Sugar of Lead			...	24	10	
Zinc Oxide			...	18	5	
Bleaching Powder			...	5	15	

CHEMICAL WOOD PULPS.—There is more enquiry for SULPHITE and imports from Norway and Sweden are well maintained. American SULPHITE is in very little request for the British market, manufacturers finding a good home demand at better prices. SODA pulps are steady.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8	12	6	to	9	0	0
,, Superior ,, ...	9	5	0	,,	9	10	0
,, Bleached, ...	11	10	0	,,	15	0	0
SODA, Unbleached, Common ...	8	5	0	,,	8	10	0
,, Extra...	8	15	0	,,	9	5	0
,, Bleached	10	10	0	,,	12	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

SULPHITE, Unbleached, dry... ...	Frs. 23.	to 25.
,, Bleached	31.	,, 36
SODA, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.
SULPHATE, Unbleached	21.50	,, 22.50
,, Bleached	27.	,, 35.

AMERICAN QUOTATIONS

AMERICAN SULPHITE, Unbleached	$2.2½ to 2
,, SODA Bleached	1.90 2.10
FOREIGN SODA, Unbleached ...	2.15 2.10
,, Bleached	2.70 2.80c.
,, SULPHITE, Bleached...	3.15 ,, 3.50c.

MECHANICAL WOOD PULPS.—Advices from Scandinavia state that there is a fair demand for Mechanical Wood Pulp at steady prices. During the past week there were several arrivals of shipments from Canada and the United States.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£6	10	0
Pine, Dry	£4	5	0	to	4	12	6
,, Moist	2	2	6	,,	2	7	6
Brown, Dry	4	15	0
,, Moist	2	10	

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt)

Pine Pulp, 50% moisture, ordinary ...	Frs. 11.	to 12.
,, ,, fine ...	12.50	,, 13.
,, dry, ordinary	11.50	,, 11.75
,, ,, fine	11.75	,, 13.
Aspen, ,, ,, ...	16.	,, 17.50
Half-Chemical Brown, 50% moisture	10.50	,, 11.
,, ,, dry ...	12.50	,, 13.

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ...	$13

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IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
2490 bales	Halifax		London
457 ,,	Stettin		,,
3 ,,	Rotterdam		,,
3232 ,,	Antwerp		,,
277 ,,	Rotterdam		,,
208 ,,	Ghent		,,
180 ,,	Norrkoping		,,
3593 ,,	Skein	R. Lloyd Ltd	,,
70 ,,	Flushing		,,
2300 ,,	Skien	Becker & Co	,,
623 ,,	,,	E. Lloyd	,,
1246 ,,	St. John's		,,
370 ,,	Ostend		,,
324 ,,	Gothenberg		,,
222 ,,	Christiania		,,
207 ,,	Drammen		,,
300 ,,	,,	Green and Co	,,
400 ,,	,,	A. H. Keep	,,
122 cases	,,	F. E. Foulger	,,
35 ,,	,,		,,
406 bales	Moss		,,
316 ,,	Hambro		,,
1400 ,,	Fredrikshald		,,
2448 ,,	Drammen		,,
24 ,,	Gothenburg	R. L. Lundgren	,,
250 ,,	,,	A. H. Keep	,,
35 ,,	,,	O. Konig and Co	,,
800 ,,	Halifax		,,
1065 ,,	St. John		,,
1067 ,,	Antwerp		,,
3090 rolls	,,		,,
23 bales	Amsterdam		,,
3815 ,,	Portland		,,
572 ,,	,,		Liverpool
1090 ,,	,,		,,
260 rolls	Fiume		,,
17 bales	Rotterdam		,,
201 ,,	Hango		Hull
101 ,,	Konigsberg		,,
1263 ,,	Drontheim		,,
80 ,,	,,		,,
430 ,,	Christiania		,,
240 ,,	Christiansand		,,
856 ,,	Gothenburg		,,
261 ,,	Hango		,,
408 ,,	Gothenburg		Manchester
458 ,,	,,		,,
370 ,,	Christiania		,,
4025 ,,	Gothenburg		,,
54 ,,	Rotterdam		Goole
886 ,,	Fredrikshald		Grimsby
100 ,,	Ghent		Glasgow
30 ,,	Hambro		Grangemouth
612 ,,	Christiania		,,
392 ,,	Gothenburg		Granton
3300 ,,	Carlshamn		,,
2995 ,,	Drammen		Preston

Totals of Wood Pulp from Each Country:

BELGIUM ...	4907 bales	NORWAY ...	22017 bales
,, ...	3090 rolls	,, ...	157 cases
CANADA ...	5601 bales	PRUSSIA ...	100 bales
FINLAND ...	463 ,,	SWEDEN ..	6952 ,,
GERMANY ...	803 ,,	U.S.A.	5477 ,,
HOLLAND ...	444 ,,	,, ...	260 rolls

ESPARTO.—There is a fairly sustained enquiry for new crop Spanish, although the firmness of sellers inclines some buyers to defer operating. African quotations steadier than formerly.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—Fair to Good	£4 15 0	to	5 2 6
,, Fine to Best	5 6 3	,,	5 12 6
Oran — Fair to Good	2 17 6	,,	3 0 0
,, First Quality	3 2 6	,,	3 5 0
Tripoli — Hand-picked	2 17 6	,,	3 0 0
,, Fair Average	2 12 6	,,	2 15 0
Bona & Philippeville	3 2 6	,,	3 5 0

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port.
517 tons	Aguilas	Morris and Co	Granton
503 ,,	Almeria	,,	,,
3866 bales	Gabes		Fleetwood
780 tons	Oran	R. H. Hay and Co	Granton
3240 bales	,,		Fleetwood
3503 ,,	Philippeville	H. Ottman	Glasgow
2355 ,,	Tripoli	Arbil and Co	London

FOREIGN RAGS.—French and Belgian rags come freely to hand. Supplies of Dutch, German and Prussian stock are only moderate. The week's arrivals at British ports were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
16	Harlingen	Hull	246	Antwerp	Goole
49	Rotterdam	,,	152	Boulogne	,,
123	Ghent	,,	47	Antwerp	Grimsby
211	Copenhagen	,,	32	Hambro	,,
213	Konigsberg	,,	130	Rotterdam	,,
43	Amsterdam	,,	668	Dieppe	,,
150	Bremen	,,	45	New York	Liverpool
16	Melbourne	,,	18	Barcelona	,,
55	Hambro	,,	410	Alexandria	,,
87	Antwerp	London	43	Ghent	,,
70	Rouen	,,	128	Bordeaux	,,
13	Kobe	,,	211	Constantinople	,,
9	Venice	,,	30	Pernambuco	,,
144	Treport	,,	46	Boston	,,
11	Las Palmas	,,	22	Konigsberg	Granton
100	Dunkirk	,,	16	Rotterdam	Bristol
50	Philadelphia	,,	277	Amsterdam	,,
38	Gothenburg	,,	61	Ghent	Manchester
16	Ghent	,,	65	St. Nazaire	Newhvn
15	Rotterdam	,,	19	Caen	,,
177	Hambro	Goole	103	La Pallice	,,
114	Ghent	,,	84	Antwerp	Leith
63	Boulogne	,,	17	Hambro	,,
68	Amsterdam	,,	33	Dunkirk	,,
56	Rotterdam	,,	390	Ghent	,,
2	Dunkirk	,,			

Totals from Each Country:

AUSTRALIA	16 bales	GERMANY ...	371 bales
BELGIUM ...	1148 ,,	HOLLAND ...	672 ,,
BRAZIL ...	30 ,,	PRUSSIA ...	235 ,,
CHINA... ...	13 ,,	SPAIN ...	27 ,,
DENMARK ...	211 ,,	SWEDEN ...	38 ,,
FRANCE ...	1736 ,,	U.S.A.	141 ,,

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7/0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	10/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No I 6/-; No. II	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	4/0
SPF	11/0	CSPFFF	10/0
FF	8/0	CSPFF	16/0
FG	8/6	CFB (Blue)	/0
FFX	7/0	CFX (Coloured) ...	4/0

FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Bl e Linens... ...	7/0
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/6
Coloured Cotton ..	3/6	,, Stay ,,	15/0

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12 0 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3,0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/0	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linens	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/0	Unbleached Cutt ngs	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste	10/0; Fair ditto 8/0
Flax Card Waste	6/0
Hemp Waste, No. 1 8/0; No. 2	3/0

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DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/o	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/o
,, No. 3 ...	6/3	W. Manilla Rope(coils)	7/3
Grey Linens ...	9/o	do. Tarred ,,	4/9
Clean House Cloth	3/o	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/o	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1¼	W. Untarred Rope	9/o
Blue Cottons ...	5/o	Paper Shavings—	
Light Lilac Cottons	7/o	Free from wood	7/o
Mxd Hemp Rope coils)	8/o	Not ree from wood	5/o

PRUSSIAN RAGS.

C.i.f. London, Hull or Leith.

SPFF	16/o	CC (Cotton)	4/o
SPF	12/6	Jute I	3/6
FG	10/o	,, II...	2/o
LFB	8/o	Rope I...	8/9
FF	5/6	,, II ...	6/o

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/o	2nd Canvas ...	7/o
2nd ,, ,, ...	5/6-6/o	Jute Bagging -	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/o
Best Canvas ...	11/o-12/o	Mixed ...	2/6-2/c

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/o
2nd ,, ,, ...	2/6	Rope, Thick	6/o
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* at Smyrna and Salonica.

HOME RAGS.—Reports to hand from London, Bristol, Manchester, Edinburgh, Glasgow, and Dublin state trade to be quiet, awaiting the results of war news, which has some bearing upon the market.

LONDON

N. White Cuttings	18/o-22/o	Canvas No. 1 ...	14/o-15/o
Fines (selected) ...	19/6-21/o	,, No. 2 ...	9/6-10/o
,, (good London)	17/o-17/6	,, No. 3	5/o
Outshots (selected) ...	11/o	Mixed Rope ...	3/o-4/o
,, (ordinary) ...	9/o	White Rope ...	3/6-5/o
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/o
Country do. ...	4/o-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/o	Gunny	2/o-2/3

BRISTOL:

Fines	16/o	Clean Canvas	14/o
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/o	Light Prints ...	6/o
Thirds	2/6	Hemp Coil Rope	9/6-10/o
Mixed Bagging... ...	2/6	Tarred Manilla	6/o

MANCHESTER:

Fines	14/o-15/o	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/o
,, (ordinary)	8/6	,, (common)	2/o-2/3
Seconds	4/6-5/o	W. Manilla Rope	7/o-7/6
Thirds	2/o-2/6	Surat Tares... ...	2/6-3/o

EDINBURGH:

Superfines	15/o	Black Cottons ...	2/6
Outshots	12/o	W. Manilla Rope	7/o
Mixed Fines...	14/o	Tarred Manilla Rope	5/6
Common Seconds ...	7/o	,, Hemp Rope...	8/o
First do.	10/o	Rope Ends (new) ...	6/o
Prints	5/o	,, ,, (old) ...	4/o
Canvas (best)	15/o	Bagging...	2/3
2nd	8/	,, (clean)...	3/o-4/o

GLASGOW.

Fines	12/6-16/c	Canva No. 1.	15/o
Blues	4/6	,, No. 2.	10/o
Common Blues... ...	3/3	Manilla Rope	8/o
Bagging	4/o	Tarred Hemp	

DUBLIN.

Whit Cuttings ...	16/o	Mill Bagging	2/o
Fines	9/o	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp	6/o
Light Prints	2/6	Rigging	10/o
Black do.	1/6		

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

WASTE PAPERS.—Prices firm with an upward tendency.

Cream Shavings ...	10/o	Small Letters ...	3/3
Fine ,, ...	8/o	Large ,, ...	4/o
Mixed ,, ...	2/6	Brown Paper	2/o
White Printings ...	7/o	Light Browns	3/3
White Waste ...	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/o	Books & Pamphlets ...	3/o
Blue Paper	2/o	Strawboard Cuttings	1/o
Crushed News	2/o	Jacquards	2/6

For Export: 2s/- per ton extra.

STRAW.—Market dull. Prices:

Oat Straw, ...	c.i.f. London	37/o ;	f.o.r. Goole,	37/6
Wheat ,, ...	do.	37/o ;	do.	37/6
Rye	do.	50/6 ;	do	50/o

STRAW PULPS.—Steady demand.

Prices, c.i.f. London, Hull or Leith.

German, dry, No. 1	£14	o o
,, No. 2	£13	o o

STARCH.—Farina firm. Prices:

F.o.r. London, less 2½%

Maize—Crisp, £9 5/-; Pearl, £6 5/-; Powder, £6 15/o Special £14.

Farina—Prime, £12 o/-; B.K.M.F., £14 o/-.

Delivered, less 2½%:

Rice—Special (in chests), £19 o/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£1

SIZING.—Market very strong and prices firm.

English Gelatines per cwt.	90/o	to	120/o
Foreign ,, ...	70/o	,,	100/o
Fine Scotch Glues	45/o	,,	6c/o
Long Scotch Glues	35/o	,,	40/
Common Black ,, ...	25/o	,,	28/o
"Town" Glues	38/o	,,	45/o
"Bone" Glues	26/o	,,	30/o
Foreign Glues	28/o	,,	35/o
Bone Size	5/6	,,	10/o
Gelatine Size	6/6	,,	10/o
Dry B.A. Pieces	50/o	,,	55/o
,, English Pieces	35/o	,,	45/o
Wet ,, ,, ...	8/6	,,	9/o
,, Sheep Pieces	3/o	,,	4/o
Buffalo Hide Shavings	32/o	,,	40/o
,, Picker Waste	32/o	,,	35/

ROSIN.—Market dull, and prices are all lower for papermakers' sorts both on the spot and for shipment. Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4/9	4/10½	5/o	5/1¼	5/3	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS.—Trade fairly steady.

Mineral Black ...	cwt.	3/6	PASTE COLOURS with
do. superior ...	,,	4/o	60% of colour, as follow:
Pure Ivory Black ...	,,	12/o	Orange Pulp ... cwt. 4c/o
Ochre	,,	2/3	Golden Yellow Pulp 30/
French J. C. Ochre	ton	60/o	Lemon ,, ,, cwt. 30/
Chrome (pure) ...	cwt.	40/c	Prussian Yellow ,, 36/o
Red Oxide	,,	4/6	Green (free of arsenic 2f/o
Umber, Devonshire	,,	50/o	Paste Blue, 20% ... 18/o
do. Turkish ...	,,	40/o	,, 33⅓; 26/o; 45⅞ 45/o
Lamp Black ...	,,	5/o-7/6	Imperial Yellow (dry 16/o
Ultramarine (pure)		35/o-45/c	(less 2½% d/d)
Cochineal	lb.	4/9-2/o	

METALS.—LONDON: COPPER steady and prices firm; TIN more active; LEAD firm. Tuesday's official closing prices:

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	51	12	6	51	17	6
,, three months	52	0	0	52	5	0
Tough	54	10	0	54	15	0
Best selected	55	15	0	56	5	0
Strong Sheets	62	0	0	—		
TIN—						
Fine foreign, cash	64	15	0	65	5	0
,, three months	65	8	0	65	18	9
LEAD—						
Spanish...	12	15	0	12	16	3
English...	12	17	6	13	0	0

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MINERALS.—The American market is in an unsettled condition on account of the war rumours. The dearth of coals owing to the Cardiff strike will affect some CHINA CLAY works adversely. FRENCH and ITALIAN CHALKS quiet. There is a moderate demand for PATENT HARDENINGS, SNOWDRIFT and SATINITE.

Mineral White also known as Terra Alba, Gypsun and Sulphate of Lime), per ton f.o.r. or boat a makers' works:

Superfine	38/0	less 2½ %; del. Lancashire ...	38/0
Pottery Super.	24/0	,, , ...	34/0
Ball Seconds ...	20/0	,, , ...	30/0
Seconds	15/0	,, , ...	25/0
Thirds	11/0	, , ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 9/0 to 23/6, bags 4/c and casks 9/6 per ton extra; delivered Lancashire 38/0 to 42/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 58/0, 64/0, 73/6, and 75/0 per ton, according to quality less 2½ %.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 2/6 per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-,

Patent Hardening (2 ton lots) f.o.r. Lancs., £35/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.

Magnesite (in lump) 39/6 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.

Bauxite, minimum alumina, 60 %, 16/3 f.o.b.

Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.

Satinite, £3 to £3 6s. 6d., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/3 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0.

LIME—The present price is 10/6 per ton f.o.r.

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings	£3 0 to £4 0

THE

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PUBLISHED EVERY FRIDAY.

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WANTED.—Situation as Manager or Foreman; used to printings, news, etc.; 6 years in last mill; good references.—Address, No. 7,248, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7248

Machinery.

BERTRAMS LIMITED,
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A FIRST-CLASS PAPER FACTORY in Sweden wants a Clever Agent for London, well acquainted with the paper trade, for the sale of its production of paper for newspapers and wall paper.—Address "Papersagent," c/o S. Gumaelii Annonsbyra, Stockholm (G. 62138). 7255

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- Ditto, in Departments.
- List of Railway Stations in France adjacent to Pape Mills, with the Distance from Paris.
- List of Foreign Papermakers.
- Preparation of Wood Pulp. Bleaching.
- Sizes and Classification of Papers.
- Old and New Customs Tariffs on Goods Connected with the Paper Trade.
- Prices of Papers.
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THE LEASEHOLD PROPERTY,

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The Prendergast Paper Mills,

together with a

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Garden and Out-premises, Orchard and Hayguard, also a Field adjoining containing 4 a. 1 r. 30. p., all held under a Lease for 21 years dated 20th August, 1894, at a Rent of £60 per annum free of tithe. The said Lease contains a clause enabling the Lessee to purchase the Freehold for the sum of £1,000.

The Mills contain all the requisite Machinery for Papermaking, and there is a plentiful supply of water from the River Cleddaw.

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Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	151	325	866
ARGENTINE	—	30	20
AFRICA	4	60	19
BELGIUM	—	—	4
B. GUIANA...	22	—	—
CAPE COLONY	29	43	—
CANADA	—	2	11
CHANNEL ISLES ...	—	—	30
CHINA	240	94	163
DENMARK	—	14	127
FRANCE	8	14	302
GERMANY...	—	13	13
HOLLAND...	20	—	41
INDIA...	182	239	72
JAPAN	—	13	—
NORWAY	—	—	2
NEW ZEALAND ...	332	289	175
PORTUGAL	98	72	18
SPAIN...	12	164	58
SWEDEN	—	—	185
S. AMERICA	—	10	—
U.S.A....	61	—	21
W. INDIA	—	14	41

FROM GLASGOW.

	Printings. Cwts.	Writings. Cwts.	Various. Cwts
CANADA	—	5	—
HOLLAND	—	—	349
NEWFOUNDLAND ...	—	10	34
SWEDEN	143	4	—

Foreign Strawboards, &c.

The following were the imports of straw boards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

7905	b Harlingen	London	1130	b Rotterdam	Manchstr
870	,, Cologne	,,	1351	,, ,,	,,
200	,, Amsterdam	,,	52	,, ,,	Goole
4205	,, Rotterdam	Bristol	2005	,, Delfzyl	Grangemth
397	,, ,,	Liverpool			

WOOD PULP BOARDS.

2160	b Stettin	London	74	b Gothenburg	Hull
447	,, Hambro	,,	58	c Hango	,,
197	,, ,,	,,	406	b Hambro	Manchester
37	r Boston	,,	842	,, Stettin	,,
12	b Hango	Hull	103	,, Gothenburg	,,
15	,, Hambro	,,	440	,, Hambro	,,

MILLBOARDS.

10149	b Harlingen	Hull	67	b Hambro	Goole
4533	,, ,,	,,	4000	,, Delfzyl	,,
7529	,, ,,	,,	203	,, Hambro	,,

CARDBOARDS.

7	c Barcelona	London

PASTEBOARDS.

400	b Trieste	Liverpool	160	b New York	London
247	,, New York	,,	355	,, ,,	,,
53	,, Malmo	Grimsby	500	,, Rotterdam	,,
1	c Rotterdam	Leith	400	,, ,,	,,
1	,, ,,	Grangemth	500	,, Antwerp	Manchestr
45	b New York	Bristol			

b—bales. c—cases. r—rolls. cr—crates.

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	8	—	—
BELGIUM	3169	6	—
CHANNEL ISLES ...	10	—	—
EGYPT	—	4	—
FRANCE	856	14	41
FINLAND	132	—	—
GERMANY	3044	83	42
HOLLAND	22387	16	27
MALTA	60	—	—
NORWAY	2997	—	87
PRUSSIA	20	—	—
SPAIN...	113	—	—
SWEDEN	6654	—	—
TURKEY	—	2	—
U.S.A.	3242	87	384

Including the Following:—

Quantity	From	Importer	Port
7 bales	Christiania	Bott & Co	London
14 ,,	,,	C. Morgan	,,
18 ,,	,,	Cookson McDonald & Co	,,
14 ,,	,,	Crabb & Co	,,
14 ,,	,,	W. E. Bott & Co	,,
23 ,,	,,	Davies & Royle	,,
21 ,,	,,	J. Hamilton	,,
8 ,,	,,	O. Scholzig	,,
70 ,,	,,	Davies & Royle	,,
7 ,,	,,	F. Sloydon & Co	,,
8 ,,	,,	Evans & Adlard	,,
12 rolls	,,	W. Guppy & Son	,,
252 bales	,,	Alsing & Co	,,
355 ,,	,,	L. Henle	,,
3 ,,	,,	M D Co	,,
46 ,,	,,	D. Webb & Co	,,
38 ,,	,,	C. Morgan & Co	,,
5 ,,	,,	Brown & Brough	,,
19 ,,	,,	Becker & Brough	,,
191 ,,	,,	E. Saunders & Son	,,
229 ,,	,,	Crabb & Co	,,
9 ,,	,,	J. Rowley	,,
27 ,,	Christiansand	Becker & Wagner	,,
36 ,,	,,	Crabb & Co	,,
20 ,,	,,	E. Lloyd	,,
35 ,,	,,	J. Spicer & Sons	,,
36 ,,	,,	Cookson & Son	,,
97 ,,	,,	C. Morgan & Co	,,
150 ,,	,,	W. Guppy & Son	,,
30 ,,	,,	Lepard & Smith	,,
276 ,,	Gothenburg	J. Eberstein	,,
58 ,,	,,	J. Spicer & Sons	,,
259 ,,	,,	Brown & Co	,,
270 ,,	,,	E. Saunders & Co	,,
135 ,,	,,	R. L. Lundgren	,,
10 ,,	,,	S. H. Holman	,,
175 ,,	,,	Schenkenwald & Co	,,
4 ,,	New York	Henderson, Craig & Co	Sth'ptn
4 ,,	,,	Wyckoff & Co	,,
4 ,,	,,	Butterick Publishing Co	,,
290 ,,	Uddevalla	D. Gulland	London
47 ,,	,,	R. L. Lundgren	,,
128 ,,	,,	Schenkenwald & Co	,,
12 ,,	Venice	C. Morgan & Co	,,
11 ,,	,,	O. Scholzig	,,

NEW PATENTS.

APPLICATIONS.

8,235. Improvements in or relating to the manufacture of paper. C. W. Kimmins.

8,310. Improvements in calendering machines. J. Downham.

8,471. Improved method of converting acid sulphates of soda or potash into caustic alkali. J. Grossmann.

SPECIFICATIONS PUBLISHED.

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1897.

9,995. Apparatus for straining paper pulp. Smith.

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Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
27 cases	Antwerp	P. Ruttmann	New York
15 ,,	,,	Merchants' Despatch	,,
9 ,,	,,	E. G. Soltmann	,,
2 ,,	Glasgow	Blauvelt and Wiley	,,
60 ,,	Havre	Druckleib and Co	,,
19 ,,	Hamburg	Dingelstedt and Co	,,
2 ,,	,,	Amsinck and Co	,,
1 ,,	,,	G. J. Kraft	,,
2 ,,	,,	Fuchs and Lang	,,
10 ,,	,,	Knauth, Nachod & Co	,,
7 bales	Liverpool	Baldwin Bros & Co	,,
5 ,,	,,	Dennison Mfg. Co	Boston
3 ,,	,,	,,	,,
2 ,,	London	Fairbanks and Co	,,
10 ,,	,,	Dickinson and Co	New York
1 ,,	Rotterdam	Merck and Co	,,
2 cases	,,	Miller, Swan & Wright	,,
56 ,,	,,	Hensel, Bruckmann	,,
21 ,,	,,	Adler and Co	,,
1 ,,	,,	Sheldon and Co	,,
75 ,,	,,	Amsinck and Co	,,

CHEMICAL FIBRE.

50 tons	Antwerp	R. Helwig	New York

MANILLAS.

31 bales	Antwerp	J. Pirnie	New York
90 ,,	,,	Salomon and Co	,,
76 ,,	,,	,,	,,
105 ,,	Hamburg	,,	,,
79 ,,	,,	,,	,,
46 ,,	Liverpool	Castle and Gotheil	,,
193 coils	,,	Dutton and Co	Boston
74 bales	,,	Butterworth & Co	,,
270 ,,	,,	,,	,,
270 ,,	,,	,,	,,
295 coils	,,	Dutton and Co	,,
16 bales	,,	,,	,,

RAGS.

271 bales	Antwerp	J. Pirnie	New York
190 ,,	,,	Castle and Gotheil	,,
86 ,,	,,	A. Kazenstein	,,
39 ,,	,,	Darmstadt and Scott	,,
40 ,,	,,	Train, Smith and Co	,,
76 ,,	,,	Salomon and Co	,,
218 ,,	Bremen	Lewy Bros	,,
284 ,,	Hamburg	Salomon Bros.	,,
14 ,,	Hull	A. Katzenstein	,,
28 ,,	,,	Salomon and Co	,,
27 ,,	Liverpool	B. P. True	Boston
20 ,,	,,	Butterworth and Co	,,
180 ,,	London	Train, Smith & Co	,,
120 ,,	,,	Warren and Co	,,
246 ,,	Stettin	Jessup and Moore	New York

WASTE PAPERS.

13 bales	London	Lyon and Co	New York
50 ,,	,,	Wheelwright Paper Co	Boston
169 ,,	Liverpool	Train, Smith & Co	,,
133 ,,	,,	E. P. True	,,
51 ,,	,,	Butterworth and Co	,,
10 ,,	,,	,,	,,

BLEACHING POWDER.

60 cks.	Antwerp	Klipstein and Co	New York
176 ,,	,,	Fuerst Bros	,,
177 ,,	Dunkirk	,,	,,
120 ,,	,,	F. A. Reichard	,,
76 ,,	Hamburg	Roessler & Hasslacher	,,
337 ,,	Liverpool	J. L. & D. S. Riker	,,
633 ,,	,,	,,	Boston
20 ,,	,,	Reed, Halliday & Co	,,
44 ,,	,,	Marble and Co	,,

CAUSTIC SODA.

100 drums	Liverpool	Hill's Son & Co	New York
100 bdls.	,,	J. L. and D. S. Riker	Boston
54 ,,	,,	J. Marble and Co	,,
50 ,,	,,	To order	,,

SODA ASH.

Quantity	From	Importer	Port
300 bgs.	Liverpool	To order	Philadelphia
124 tcs.	,,	,,	,,
14 cks.	,,	Wing and Evans	Boston
400 bgs.	,,	,,	,,
26 tcs.	,,	,,	,,
68 cks.	,,	Warren and Co	,,
67 ,,	,,	,,	,,
20 ,,	,,	Churchman & Co	,,
900 bgs.	,,	Wing and Evans	New York
9 cks.	,,	J. L. & D. S. Riker	,,

SIZING.

103 bgs.	Liverpool	Train, Smith & Co	Boston
44 ,,	,,	Warren and Co	,,
810 ,,	,,	Butterworth and Co	,,
70 ,,	,,	Groom and Co	,,
232 ,,	,,	To order	,,

ALKALI.

50 cks.	Liverpool	Linder and Meyer	Boston

SULPHUR.

667 bgs.	Liverpool	Linder & Meyer	Boston
300 ,,	Palermo	To order	,,

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Abridged Patent Specifications.

2,397 (97). — **Improvements in and Relating to Eyelet Feeding Devices or Apparatus.**

Apparatus or devices for feeding eyelets, such, for example, as those which are employed in eyeletting machines, is the subject of this invention, the object sought being to so construct or arrange such devices as to ensure a regular supply of eyelets to the punch or the like. An eyelet feeding device constructed to embody these improvements is provided with a rotary part carrying spring controlled arms or the like which force the eyelets towards or into the shoot or shoots. In one form the feeding device consists, as is usual, of a receptacle or box which contains the eyelets, and a shoot or channel which conveys the eyelets to the punch. Contained within the box is a disc or its equivalent adapted to rotate, and carrying spring controlled arms, so disposed and arranged as to force the eyelets outwards to the walls of the box upon the rotation of the disc. The walls of the box are provided with openings through which the eyelets pass, and enter the shoot or the opening of the shoot. Should any of the eyelets jam or stick, or in any way offer undue resistance to the movement of the spring controlled arms, these latter give way and fold under the disc to which they are attached, and thus remove all danger of crushing the eyelets. In another form of device, which is preferably adopted when one box has to supply more than one shoot, the lid of the box may form the rotating part which carries the spring controlled arms, the arms being outside the box.

17,463 (97).—**An Improved Collapsible Cardboard Box.** — EMANUEL STERN. Accepted 4th December, 1897.

Relates to a concertina-like collapsible box, which appears particularly suitable for containing hats. It requires very little space for storage. The box has at the bottom two diagonal grooves or creases, and a third crease which connects two end creases on opposite sides of the box. By means of these creases or grooves the bottom and the two ends may be pressed in in such a way that the box when collapsed only occupies a height of about three centimetres.

21,726 (97).—**Improvements in Machines for Cutting Paper and other Materials.** — FREDERICK ADEE BESSEY. Accepted 8th January, 1898.

The construction of a machine in which the resistance which the knife meets in cutting the paper shall be transferred over to, and increase the power and pressure of, the clamp which holds and compresses the paper during the cutting operation is the object sought in this invention. A further object is to embody this feature in a machine which shall accomplish the clamping, cutting, and releasing of the paper without reversal of the driving power, and also by one revolution of the clamp operating shaft; and a still further object is to construct a machine of this character in which the knife shall have a slow descent and a quick ascent and quick release of the clamp, to provide for a clean and effective cutting of the paper, and its quick release after being cut.

THE London School Board have accepted the tenders of the following firms, as set out below:—Eyre and Spottiswoode, for supplying drawing boards, 23-in. by 16-in., at 16s. 9d. per dozen. T-squares, per dozen: 42-in., at 14s. 6d.; 30-in., at 9s. 6d. Set-squares, plain, per gross: 6-in. 45 deg., at 6s. 9d.; 8-in. 60 deg., at 6s. 9d. McDougall's Educational Co., Ltd., for supplying semi-vertical headline copy books, at 11s. 9d. per gross.

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A Ba.	55	21¾	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C..	60	23¾	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25¾	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D..	71	28	730	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E..	83	32¾	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35¾	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F..	95	37¾	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39¾	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G..	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44¾	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H..	120	47¾	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I..	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z..	210	82¾	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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Commercial Intelligence.

Re CHARLES JAMES FLEMING,
Late Newspaper Proprietor.

A sitting of the London Bankruptcy Court was held recently for the public examination of this debtor, who was described of Glazbury-road, Kensington, and formerly of Avenue House, Alexandra Park, Manchester. He was M.P. for Doncaster from 1892 to 1895, and in the latter year he unsuccessfully contested Dudley. For a few months in 1891 he owned and edited the *Weekly Review*, but abandoned it after he had made a loss of £1,650 on the paper. He had also acted as director of a publishing and other companies, and had been concerned in the promotion of a company to acquire music halls in Paris. The failure was caused by the fall in the market value of shares held by the petitioning creditor against an advance. The examination was ordered to be concluded.

Re CHAS. HENRY HALL,
Printer and Publisher.

At the London Bankruptcy Court, before Mr. Registrar Hope, a sitting for public examination was recently held under the failure of Charles Henry Hall, described as of 171, Strand, W.C., and late of Preston, trading under the style of the Empire Publishing Co. and the Empire Printing Co. The accounts showed liabilities £3,212 3s. 9d., of which £2,536 11s. 10d. were expected to rank, with assets estimated to produce £339 4s. 1d. In reply to the official receiver (Mr. H. Brougham), the debtor stated that he commenced business as a coal dealer in August, 1896, at 49, Lune-street, Preston, under the style of Hall and Co. At that time he was under age, as he did not attain his majority until the following September. At the latter date he came into about £4,600, under a settlement executed in 1876 by his father, and with the aid of this money he proposed to enlarge the business. He took in a partner, and ultimately sold the business for £170. In February, 1897, he entered into the business known as the Empire Printing and Publishing Co. It was originally styled the Empire Printing and Advertising Agency, and the *Empire Journal* was produced by the company, which carried on business at Guildhall-street, Preston. He became connected with Mr. Joseph Bewsher in reference to the matter, and put £50 into the concern, in return for which he was to receive one half of the profits. There was no deed of partnership, only a verbal understanding. He began to take an active part in the business about May, 1897, having advanced money in respect of it on several occasions. The address was then changed to Market-street, Preston, and ultimately to 171, Strand, London. Mr. Bewsher acted as his manager down to August 15th, when he (the debtor) paid him out, giving him £50 for his interest in the concern, but retaining him as manager. He continued the business at Preston after he removed to London, but only for a short period. The Official Receiver: Had you any experience whatever, either of the coal business or of the printing business, when you took them over? None whatever; I attribute my failure to lack of business capacity, and to losses and liabilities incurred owing to my ignorance of business and also to mismanagement. He had been pressed by creditors for about three weeks prior to the execution. With regard to the printing business, the banking account was at first kept by Mr. Bewsher in his own name, but subsequently an account was opened in the name of Hall and Bewsher. He was aware that Mr. Bewsher had tendered a proof for £117, including £100 money lent, but no such sum was ever advanced, and he disputed the proof entirely. He never went into the affairs of the business with Mr. Bewsher, and never even looked at the cash-book or the pass-book. According to the cash-book produced, the total receipts from the business amounted to £195 only, whereas he had put at least £1,400 into the concern. He could not explain those figures in any way. Even taking the book debts into consideration, the total receipts did not amount to £800. Of the £4,600 received from his father's estate, £600 was invested in shares and debentures of Trade and Industry, Ltd., a company which was formed for the purpose of producing a paper called *Trade and Industry*. A sum of £250 was paid by him to his brother in respect of advances made before he came of age and he believed that he could produce vouchers for this payment. He would undertake to give a full account of the manner in which other sums paid to his brother had been devoted. Examined by Mr. Francke (appearing for him), the debtor said that the *Empire Journal* was only a local paper at Preston. When he came of age he had been managing it, and therefore had some little experience. What have you spent upon yourself? A very small sum, not exceeding £3 per week. All the rest has gone into my business. The official receiver at first applied for an adjournment, to enable the debtor to furnish an account showing what had become of the money paid to the debtor's brothers, and also particulars of a claim for £350 made by one of them, but upon the debtor undertaking to furnish the accounts required, and it being stated that a proof for £350 would be withdrawn, the official receiver withdrew his application, and no creditor appearing to oppose, Mr. Registrar Hope ordered the examination to be concluded.

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OF THE

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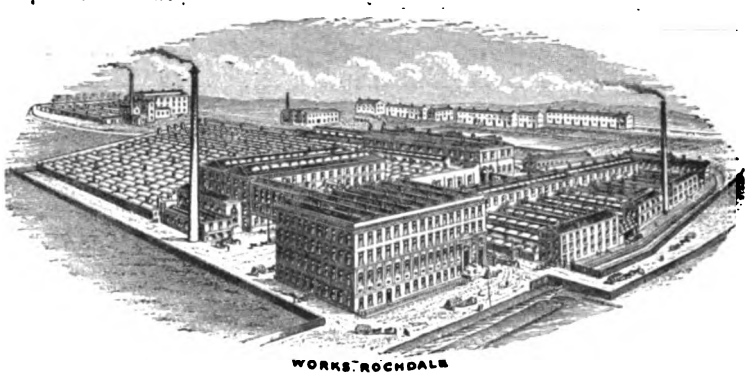

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VOL. XXIX. No. 17. LONDON: APRIL 29, 1898. EVERY FRIDAY. PRICE SIXPENCE.

"THE Recent History of Papermaking."

The INVENTION of the "DANDY ROLL."

In the very interesting paper read by Mr. Clayton Beadle recently before the Society of Arts, there was a reference to the invention of the dandy roll, the statement being made that "the dandy roll was invented in 1830 by Wilks, a partner in the firm of Bryan, Donkin and Co."

In many minds, and there is evidently good groundwork for the belief, the late John Marshall, of Dartford, has long been considered the inventor of the "dandy roll." He founded the business now known as T. J. Marshall and Co. in the year 1792, and it was in the year 1826—quite four years previous to Wilks invention—that he invented the dandy roll, although apparently there are no patent records to go upon. There is every reason to believe, however, that many years before that date John Marshall had worked up an extensive business at Dartford in the manufacture of moulds for making paper by hand; for instance, there is on record an order from Messrs. Henry and Sealy Fourdrinier for moulds, the date being January 16th, 1805. As the paper machine was taken up by the various mills his connections increased. Probably he trusted to his own reputation, rather than troubling about a patent, especially being cognisant of the sad experience of the Fourdriniers in patent matters.

Wishing to learn as much as possible about the early history of the "dandy roll," our representative recently called at Campbell Works, Stoke Newington, N., and was courteously received by Mr. T. Allen and Mr. C. Dudley Marshall, the partners in T. J. Marshall and Co., and grandsons of the founder of the business, John Marshall, whose portrait we include, and also a *facsimile* reproduction of his business card.

Messrs. Marshall had seen the reference to Wilks as the inventor of the "dandy roll," but stated to our representative that they were in a position to show an old order book containing dates previous to that of 1830. The book was carefully handed over for our inspection, and entries were to be seen to the effect that John Marshall had received orders from most of the early machine papermakers. The book in the possession of Messrs. Marshall cannot be regarded as the first one used for orders, and therefore it is impossible to say how many preceded it. However, a few extracts will be sufficient to show the dates of certain orders:—

	J. HALL AND SON, CR.	£	s.	d.
Jan. 19th, 1827.	To two carriages for a riding roll	0	9	6
	M. TOWGOOD, Dr.			
Jan. 20th, 1827.	To a wove riding roll, carriages, etc.	8	7	6
	M. TOWGOOD, Dr.			
Feb. 23rd, 1827.	To a riding roll	8	12	0
	M. TOWGOOD, Dr.			
April 28th, 1827.	To new joint in riding roll ...	0	17	6
	J. AND C. PHIPPS, Drs.			
July 26th, 1827.	To a laid riding roll	10	5	0
	M. TOWGOOD, Dr.			
July 13th, 1827.	To covering a riding roll, etc.	2	17	11

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T. NASH, Dr.

June 16th, 1828.	To a wove riding roll	8	16	6

J. AND C. PHIPPS, Drs.

June 24th, 1828.	To a spiral laid riding roll ...	13	11	6

T. WEEDON, Dr.

Sept. 24th, 1828.	To a riding roll	5	0	0

C. MAGNAY AND SONS, Dr.

Dec. 24th, 1828.	To a riding roll with case, 3s. 6d.	6	1	6

J. AND C. PHIPPS, Drs.

Jan. 15th, 1829.	To a riding roller covered with a 60-hole wire 5-ft. 1-in. between the shoulders of the bars and 5-ft. 3¼-in. of bearings.	3	0	6
	To case		4	6

JOHN DICKINSON, Dr.

Jan. 20th, 1829.	To a riding roller, 5-ft. full between the shoulders of the bars and 5-ft. 6-in. between the bearings.	4	18	0
	To case for ditto...		4	6

JOHN MARSHALL,
The Inventor of the "Dandy Roll."

MATTHEW TOWGOOD, Dr.

March 20th 1829.	To 4 ozs. of sewing wire—for Hawley		1	9
	To 49 holes machine wire omitted February 7th, for Dartford	13	12	10

T. NASH, Dr.

April 14th, 1829.	To a 60-hole machine wire omitted April 2nd.	12	16	0

MATTHEW TOWGOOD, Dr.

July 9th, 1829.	To a riding roller on the hollow plan, carriage, etc., covered with 12 hole and 40 hole, for Hawley, 4-ft. 9-in. between bearings	4	5	0
	Two 48-hole machine wires ...	25	18	3

A. COWAN AND SON, Dr.

Aug. 31st, 1829.	To a 56-hole machine wire ...	11	18	0
	To hollow riding roll 5-ft. between bearings	5	6	0
	To case and rollers for the wire		12	0

MATTHEW TOWGOOD, Dr.

Nov. 9th, 1829.	To a riding roll for Dartford Mills	5	0	0

B. DONKIN AND CO., Drs.

		£	s.	d
March 27th, 1830.	To a 46-hole machine wire, 24-ft. 4-in. by 4-ft. 3½-in. ...	9	2	10
	To putting in 1,770 circles in ditto	12	7	0

J. AND C. PHIPPS, Drs.

March 27th, 1830.	To a laid roll fitted on a tube, etc.	13	2	6

A perusal of the book from which the above items are extracted is full of interest, and we may at a later date make further reference to the entries, as they indicate the firms that were amongst the earliest to introduce the papermaking machine. The names of Towgood and Dickinson are very prominent in the day-book under notice, and there can be no doubt of the comparatively big demand for rolls prior to 1830, the date of Wilks' patent. Our readers will notice that most of the entries by John Marshall were for riding rolls, the general designation in those days. When the rolls, in their dazzling brightness, were delivered at the mills, a frequent exclamation was, "Oh, what a dandy!" It was in this way that the rolls were subsequently called "dandies,"

INVENTOR & MANUFACTURER
of Water-Mark Rolls for Paper Machines.
FAC-SIMILE OF BUSINESS CARD.

although many firms—for instance, Messrs. Thomas Weedon and Son, of Temple Mills, as late as 1860—adhered to the habit of giving their orders for riding rolls. In Messrs. T. J. Marshall and Co.'s private office the visitor has the opportunity of observing a unique collection of watermarks, and amongst other curiosities may be mentioned the old roll that was supplied to J. and C. Phipps, July 26th, 1827, mentioned above. Our representative, before taking his departure, was shown over the well-lighted and substantial workshops by the senior partner, Mr. T. Allen Marshall. The activity in all departments was very noticeable, the deft-handed workmen being engaged on the various parts of dandies for many leading mills. The skillful manipulation by hand as well as by machinery was very enticing to watch, and supplemented with a fund of information supplied by so experienced a guide, who has a practical acquaintance with all branches of the work, our representative's visit proved instructive as well as interesting. The system of patent watermarking—invented by Messrs. T. Allen Marshall and C. Dudley Marshall in 1870—was fully explained, its simplicity, effectiveness, and economy being very apparent.

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MODERN FILTERS

REISERT'S SYSTEM.

One of the most important conditions in papermaking is pure water, as it means economy in the manufacture and a higher standard in the quality of the paper. One of our readers writes us on this point as follows:—

"On my tour round the American, British, and German mills, I was greatly interested with a small gravel filter at the Aschaffenburg Sulphite and Paper Works, the construction of which may be of some interest to many of your reader.

"The filter consists of a cylindrical vessel with two partitions *f*, *f*, of perforated metal plates and wire netting, which are fastened horizontally at a certain distance from each other. The space between them is filled—about four-fifths with fine pearl gravel. Fig. 1 shows the apparatus in action. The muddy water passes through valve *A*, passes through the gravel, and flows off clarified through valve *B*.

"When the filter material has become so impure that the cleansing effect decreases perceptibly, the filter must be cleaned. To effect this, the inlet *A* must be closed and the

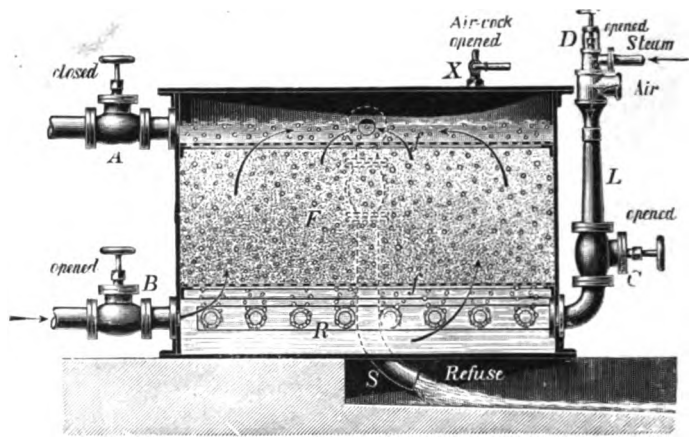

FIG. 1.

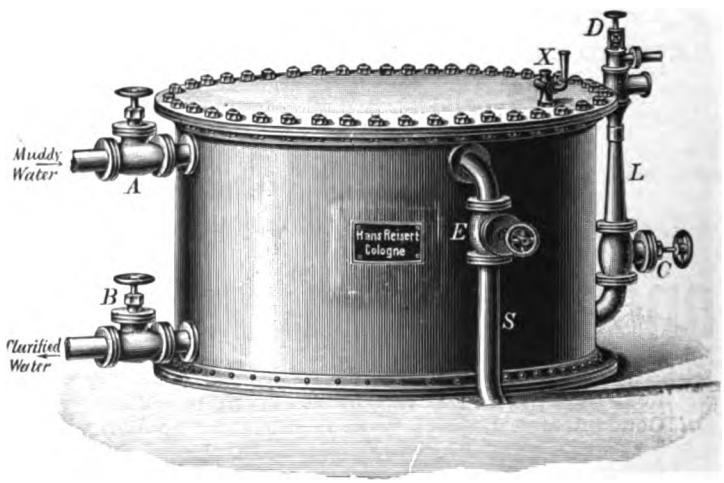

FIG. 2.

mud outlet *E* (Fig. 2) and the air cock opened. The valve *C* must also be opened and the air compressor *L* put in action by opening the steam valve *D*. Compressed air is spread by a system of pipes *R*, furnished with a number of little holes under the entire surface of the filtering material, thus producing in it a violent stirring-up action, partly through the upward movement of the air and partly through the back flow of the water. The impurities are thus separated

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from the filtering material and washed away through the valve *E*, whilst the air escapes through the air cock *X*, and the steam condenses. The air compressor must be closed after a few minutes, but the water must still flow for two or three minutes more in order to remove all the air from the gravel and to cleanse the latter entirely. All the valves are then put again into their original position (Fig. 1). The washing of the filter takes about five minutes.

"It is evident that this apparatus must do good and reliable work at very little cost, from the following reasons:—Gravel is the material which nature uses for filtering purposes, and the combination of the above gravel filter with an air compressor makes it possible that a small surface will filter large quantities of water, as the washing can be done in a few minutes without stoppage. The working is so effective, so inexpensive and clean (no renewal of gravel), and the cost of the apparatus so low, compared with other systems, that I was not astonished to find that many mills have discarded their costly clarifying reservoirs and adopted this small gravel filter.

"The battery of filters at Aschaffenburg consists of five of these small filters with a capacity of 45,000 gallons per hour. I have seen in Scotland a battery of five filters of a similar system, double the size of the Reisert filter, with only a capacity of 24,000 gallons, that is, half the quantity at double the size, and of course, double the cost.

"The filtering material of all other existing filters must at very short intervals be washed by complicated and lengthy means, and it must also be frequently renewed. Besides these inconveniences and difficulties during work, comes the evil of the disproportionately great space they occupy. With regard to the novelty of the apparatus and the advantageous method of working it, I would remark, that a simple back flowing of the water, which has before been occasionally tried, is quite insufficient for the washing of the filter, because the back flowing water forces a passage through the weakest part of the filtering material and runs through it with scarcely any effect, so that the largest part of the filtering material remains still impure. Only by a simultaneous and regular distribution of compressed air beneath the filtering material is it rendered possible to secure its rapid and complete cleansing. If one considers the filters used in most self-acting feed water purifiers, in which the water to be cleansed enters at the bottom and passes upward through sponges, wood shavings, etc., it is evident that the water in its progress meets with increasing obstructions from the accumulating impurities, and at last forces a passage through the filter material and issues in a muddy state. The owners of water purifying plants with filters of the latter kind are sure to know the disadvantages described above. These disadvantages may be obviated by combining these apparatus with a Reisert's patent gravel filter."

Messrs. H. Bertram and Co., of 28, Queen-street, London, E.C., are the agents in this country for the Reisert filter, and they will gladly supply further particulars to interested persons. Messrs. H. Bertram and Co., we understand, are prepared to supply an apparatus to any paper mill on a three months' trial.

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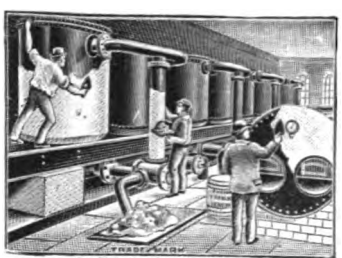

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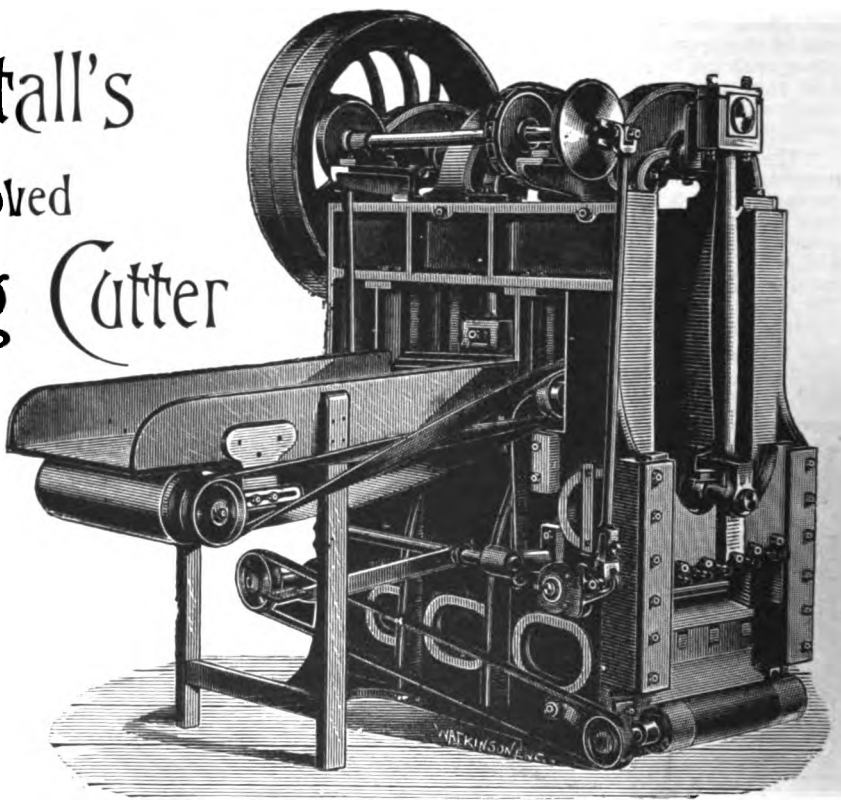

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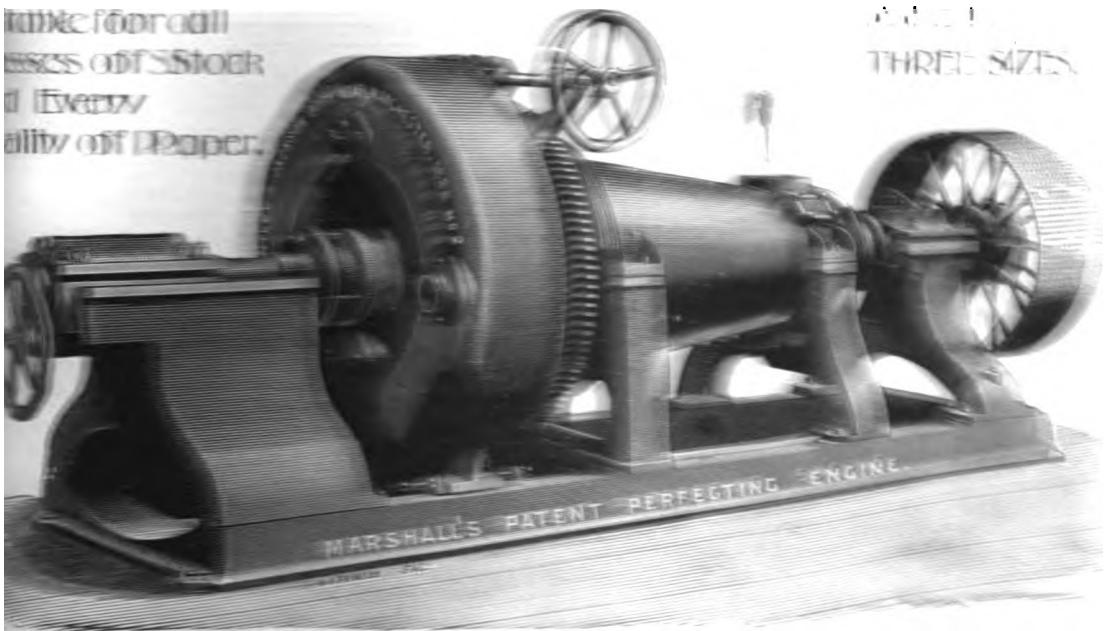

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OBURN-TAYLOR Machine.

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Pirie, Wyatt & Co., Ltd.

DIXON v. WYATT.

This case came before Mr. Justice Kekewich on Thursday, last week.

Mr. Patterson said plaintiff was a former holder of 200 shares in Pirie, Wyatt and Co., Limited, and he claimed a proportionate part of the dividend which was due in respect to those shares during the period in which he held them. In March, 1896, this company was formed to acquire the business of Dixon, Horsbrugh and Co., in which the plaintiff held 112 shares, and in respect of that holding plaintiff was allotted 200 shares of £2 10s. in Pirie, Wyatt and Co. The articles of association contained stringent clauses as to transfer of shares from one member to another. For some reason or other certain shareholders in the company desired to get rid of the plaintiff, and on September 5th, 1896, plaintiff received notice from the company that a request in terms complying with the provisions of the articles of association had been served requiring the enforcement of the provisions of the articles in respect to his shares. On September 10th the directors gave notice that they had made a contract to transfer plaintiff's shares to the defendant, and the defendant gave notice that he estimated the fair value of the shares at £2 15s. each. Plaintiff did not like to be thus ousted from the company, which he believed to be a good one. In due course the transfer was made, plaintiff was paid out, and the register rectified by the name of the defendant's nominee being substituted for the name of the plaintiff. Some time afterwards a dividend was declared upon the shares, and the question for his Lordship's decision was whether, in the case of a transfer like this, the whole of the dividend went to the transferee, or whether it should be apportioned so that the original holder should receive a proportionate part.

Mr. Justice Kekewich did not think the Apportionment Act applied except in case of death.

Mr. Patterson submitted that plaintiff was entitled to dividend which accrued while he held the shares.

Without calling upon Mr. A. J. Chitty for the defendant, Mr. Justice Kekewich said plaintiff had entered into a contract when he had accepted shares in the new company, and could not now evade it. Judgment must be for the defendant, with costs.

Association of Swedish Paper MANUFACTURERS.

THE following are the rules governing the sale of paper adopted by the Association of Swedish Paper Manufacturers:—

A.—1. The following deviations above or below the weight ordered are allowed for paper and board of all kinds: 8 per [illegible] 20 grammes per square metre, 6 per cent. in papers from 20 to 200 grammes per square metre, 4 per cent. in papers of more than 200 grammes per square metre. These figures apply to the average weight, [illegible] sheets or packages of a [illegible] showing greater average [illegible] 2. Sizes of sheets and [illegible] may deviate up to one-half per cent. from the [illegible] ordered.

B.—Paper cannot be rejected because of slight differences [illegible] strength. Differences in strength [illegible] 10 per cent. are admissible.

C.—[illegible] under these rules must be [illegible] 1,000 kilogrammes of one quality, size, colour and [illegible] extra charges per cent. additional. The purchaser [illegible] accept amounts up to 10 per cent. of the weight ordered, paying for same at 10 per cent. [illegible] 2. The delivery weight of paper which, because of its [illegible] water mark, cannot be reckoned as standard [illegible] according to contract if it does [illegible] the weight ordered by more than [illegible] grammes, 5 per cent.; 1,000 to 10,000 kilogrammes, 10 per [illegible] that 10,000 kilogrammes, 15 per cent. The [illegible] and other paper is 2 per cent. higher than that of cut-to-size paper.

D.—Wrapping paper, boards and [illegible] used for packing are weighed with the paper at [illegible] at the same prices. Boxes and extra packing for export are charged for separately.

E.—In ordering reams the weight is to be given in kilogrammes and half-kilogrammes, and the size in centimetres and half-centimetres. Sizes or tracts as are admissible only in the case of very small sizes of paper weighing less than 50 grammes per square metre.

F.—Disputes are to be adjusted according to the law [illegible] the [illegible] seat.

"Snowdrift Lubricants."

It may not be generally known by our readers that Messrs. Snowdon, Sons and Co., Ltd., of Millwall, London, E., the well-known manufacturers of the "Snowdrift" paper toughener, are amongst the largest producers of lubricants in the United Kingdom. They own certain trade secrets, and the manufactures produced in accordance therewith have gained a high reputation on the market. The solid lubricant known as "Bell's Asbestoline," and sold since January 1st, 1895, by Bell's Asbestos Co., Ltd., is the invention and manufacture of Messrs. Snowdon, Sons and Co., Ltd., who will now, as the contract with Bell's Asbestos Co., Ltd., has terminated, supply it direct to users under the registered name of "Snowdrift Lubricant." Under this name buyers may rely upon obtaining the real article, whereas other designations offered by other manufacturers are simply an imitation. The lubricators for using "asbestoline" have also been supplied by Messrs. Snowdon, Sons and Co., Ltd., most of them being their own registered designs, and some of them their own patents. The lubricating oils sold by Bell's Asbestos Co., Ltd., have, we are informed, also been exclusively made by Messrs. Snowdon, Sons and Co., Ltd., under their own trade secrets, and they are now prepared to supply these direct at a considerable reduction in price. The Millwall firm have also entered into the home trade in asbestos and india-rubber, boiler covering composition, and general mechanical goods, in which they have a large foreign connection. It is a branch of their business they intend to extend considerably in the future.

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FOR

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[illegible]

[illegible]

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Fleming's "Teon" Belting.

In connection with the practical working of a paper mill, there is no more troublesome question with which the owner or his responsible manager has to deal than that which concerns the transmission of power from the main driving engine, or turbine, or water wheel, as the case may be, to the machinery generally throughout the premises. The choice lies between spur gearing rope-driving and belting chiefly, and whereas belting is ordinarily the most convenient, the selection of a particular kind is seldom an easy matter. The average paper-maker's choice will probably incline towards leather belting, but the conditions of atmosphere and moisture which prevail in most paper mills render ordinary leather belting in many cases the least suitable. There is certainly no lack of substitutes now in the market—good, bad, and indifferent—and the plethora increases the difficulty of a suitable selection rather than tending to diminish it. A wise discrimination has to be exercised, according to the local conditions and circumstances, which, in nine cases out of ten, govern the situation.

Amongst many paper mill engineers composite and textile beltings are held in high favour. Between thirty and forty years ago they had to divide their favours between beltings made of indiarubber and those made of leather. No one can pretend seriously to assert that either description is useless for paper mill purposes, but it would be equally fallacious to insist that these sorts are as suitable for certain drives as other kinds of more recent introduction. Amongst the larger manufacturers of beltings who have made successful efforts in this direction may be mentioned Messrs. Fleming, Birkby and Goodall, Ltd., of West Grove Mill, Halifax, a firm who have long been associated with the best practice in the production of leather belting for machine drives and of mechanical leather generally. One of their most successful introductions in composite beltings was Fleming's patent "Atlas" combination belting. The leather face which it has presents an admirable surface to the pulley, while the cotton in its composition prevents the joints from coming undone. Their "Dermatine" belting is another kind which has done successful driving in paper mills, and similar remarks apply also to the firm's "Capata" and others of their beltings. Quite a new production, however, which is specially recommended for paper mill drives, is Fleming's "Teon" belting, which has been introduced as a superior substitute for indiarubber, balata, and similar beltings, possessing the good qualities of these without any of their inherent disadvantages.

The "Teon" belt should prove itself useful in paper mill driving on account of its capacity for resisting the action of steam, water, and moisture. It is claimed that it will also work effectually in acids and between forks, besides running perfectly true ...ly at the highest speeds. Further, ...ed that the "Teon" will not fail where other belts give way; nor will it crack or split, melt in extreme heat, either atmospheric or artificial, stretch or slip, although at the same time it possesses an adequate measure of elasticity. It will also satisfactorily perform the most difficult drives. An examination of a sample of 3½-in. belting gives evidence of the toughness, fibrous strength, and consequent apparent durability of the composite material. It has the added advantage of being, for a good and dependable belting, inexpensive.

The "Teon" belting is made in widths which vary from 1-in. to 48-in. Up to 2¾-in. wide the belting is made in two and three ply; from 3 to 4½ in. in two to four ply; then in increasing numbers of plies up to eight ply for 10 and 11-in. beltings; while from 12-in. wide and upwards to 48-in. it is made from two to ten ply. Messrs. Fleming, Birkby and Goodall, Ltd., make no extravagant pretensions for their new belting, but they are prepared to stand by the merits which we have recapitulated; and, to show their confidence in its utility, they undertake that, if after a fair trial it should be proved inferior to any other composite textile belt, they will replace it with a new belt free of cost. These conditions lack nothing on the score of fairness, and papermakers who are in doubt as to the efficiency of the beltings which they may be at present using have nothing to lose by taking Messrs. Fleming, Birkby and Goodall, Ltd., at their word, and testing the running powers of the new "Teon" by means of the fair trial offered.

RAG, ETC., CUTTER.—A patent has recently been taken out in this country by Hans Albert, of Kronstadt, who claims an improved machine for tearing up rags, rope ends, and similar articles of any size for the purpose of paper and millboard manufacture, or for spinning, weaving, and rope-making, and without the application of water, so that the greatest possible uniformity and sufficient length of fibres are obtained, while the time required as compared with that by the ordinary rag engine is reduced to a minimum. The machine is characterised by a helical saw toothed blade which operates upon the material that by means of an endless apron and weighted grooved feed rollers is fed into a weighted movable mouthpiece so that the material is cut up evenly and by centrifugal force disintegrated. He further claims a saw toothed blade made in parts fixed in a boss between flanges in combination with suitable feeding and squeezing devices for the material to be cut up.

COAL IN IRELAND.—A large bed of coal, 4-ft. 6-in. thick, covering an area of 500 acres, has been discovered near Ballycastle, county Antrim. For some time past a local syndicate has been making investigations, and, according to the report of Mr. G. J. Kell, a mining engineer of Barnsley, the field contains over 2,500,000 tons of coal somewhat superior to the best Scotch, and quite equal to the average quality burned in London.

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

MR. M. J. TUOHY, buyer for Sands and McDougall, Ltd., Melbourne, has just arrived in this country, and will be glad to receive samples of suitable goods at 6, Snow-hill, London, E.C.

CHINA CLAY CO., LTD.—A petition has been presented for the winding-up of this company, by Mr. R. C. D. Beale, china clay merchant, of Fowey, Cornwall. The petition is to be heard on May 13th, at the Town Hall, Truro.

EXPLOSION AT AN ELECTROLYTIC CHEMICAL WORKS.—An explosion recently occurred at the works of the Castner-Kellner Alkali Co., Weston Point. A man named Robertson was employed on a staging in the upper part of the building, and he received a full share of the explosion. and was precipitated to the ground beneath, a distance of about 40 feet. By a few inches he escaped falling amongst the machinery, and it is miraculous that after so great a fall he was picked up suffering somewhat from severe scalds and bruises, but no bones were broken. Another man named Talbot was also slightly injured. By the force of the explosion a five ton overhead travelling crane was dislodged from its position and fell to the ground beneath, and was rendered a useless mass of machinery. The officials of the company are very reticent as to the cause of the explosion.

SERIOUS FIRES.—Flames burst forth suddenly, just before five o'clock, on Tuesday morning, at the shop of Mr. A. S. Gregory, wholesale rag merchant, 175, Kingsland-road. With great rapidity the fire spread through the remainder of the building of eight rooms, the large masses of rag on the premises emitting a suffocating smoke. The brigade worked hard for over an hour before they could overcome the flames. They could not, however, save the premises, which were practically gutted. A portion of the roof fell in before the outbreak was subdued.—The large paper warehouse, the Atlas Works, in Newington-causeway, was the scene of an alarming outbreak of fire on Tuesday afternoon. The property attacked covers a very large area, the building being five floors high. The private hydrants of the firm were promptly got to work, but the workpeople found themselves unable to cope with the flames. In the end the front basement of the large building was very badly damaged, but the fire brigade succeeded in saving the upper floors from destruction.

TRIPOLI.—According to the latest British Consular report from Tripoli, it seems that, owing to a variety of causes, the trade of the province is in an unsatisfactory condition. Amongst the chief exports are esparto fibre, skins, hides, etc. Great Britain takes half the exports and sends about a third of the imports, no other country approaching her proportion of either branch of trade. A bad harvest, the cessation of the trade with Tunis, and great competition amongst commission agents are some of the causes given for the bad state of the trade; but the main cause is the condition in the caravan trade, on which the commercial prosperity of Tripoli depends in a great measure. Esparto from Tripoli all goes to England.

MESSRS. ZILZ AND STOTT, owing to the retirement of Mr. H. Beck, of 22, Bush-lane, Cannon-street, London, E.C., will in future carry on at the old address the joint agencies for The Badische Anilin und Soda Fabrik, Messrs. G. Seigle and Co., colour manufacturers, of Stuttgart, and Messrs. Schroeder and Stadelwann, of Oberlahustein-on-Rhine, earth and mineral colour manufacturers for papermakers, etc.

MR. W. H. WILES, formerly manager at the Tuckenhay Paper Mills (Turner, Symons and Co., Ltd.), has been appointed manager at Bowling Mills, near Glasgow (Tait Pulp Co., Ltd.). At Bowling Mills, many of our readers will remember, arrangements were made to work Tait's jute process, and as Mr. Wiles has given particular attention to this fibre no doubt his experience will be of great value. Mr. Wiles, from time to time, has introduced various specialities in the manufacture of paper, and he was one of the first to produce variegated coloured papers. In our issue of April 8th we referred to a patent lately granted to Mr. O. H. Stone, of Erdington, near Birmingham, for a process relating to the production of mottled coloured paper, but as a matter of fact a similar method was worked many years ago by Mr. Wiles, when manager at Stowford Mills, Devon, the product—a writing paper—being called "Mother-of-Pearl."

ELECTROLYSIS.—A British patent has been taken out relating to the bleaching of straw and other fibrous materials by Mr. G. H. Pond, of the United States. His method of disintegrating and bleaching straw by the electro-chemical decomposition of a solution of chloride of sodium consists in packing or banking the straw in a tank containing a solution of chloride of sodium in such manner that an open cell is formed between the mass of straw and the cathode and between the straw and the anode, then causing it to be circulated throughout the straw from the cathode cell to disintegrate the straw, and then circulating the solution from the anode cell through the disintegrated straw perfectly bleaching the same, and further circulating the solution from both the anode cell and the cathode cell by opening the gates in each, and combining the contents of both of said cells into a hypochlorate of soda, perfectly bleaching the material.

A BEAUTIFULLY illustrated list of new spring books has just been issued by Messrs. Ward, Lock and Co., Ltd., of Salisbury-square, London, E.C., who will be pleased to forward a copy post free to any address on application. It is a comprehensive record of their new season's books, and is profusely illustrated with reduced *facsimiles* of the illustrations to the most important volumes.

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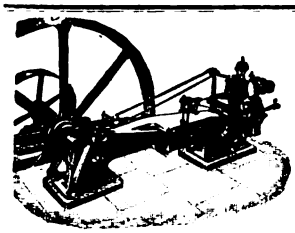

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

THE reports from Norway and Sweden on the wood pulp industry state that there is an improved demand, and that prices are firmer.

CHEMICAL wood pulps are in steady request. Manufacturers of well-known brands of sulphite state that business is satisfactory. For soda pulps there is a well-maintained demand.

THE firmness of the market in Scandinavia is attributed to a large extent to the hostilities now going on between the United States and Spain, it being considered likely that the exports from the former country will drop off considerably in the future.

OUR Norwegian correspondent states that makers of mechanical are asking higher prices, and that the market is certainly stronger.

MOIST pine is firmly quoted at £2 5s., and dry pine at £4 8s. 9d.

AN interesting letter is published in this issue from a "Canadian Manufacturer," who points out the advantages enjoyed by Canadian mills over those of the United States in competing with Scandinavian pulp in the British market.

IN reporting upon the wood pulp market in France, Mr. A. L. Grondal, of Paris, states that business during the past month in chemical pulps has been quiet, but prices are well maintained. Producers are of opinion that in spite of the new mills lately started up, the consumption has increased to such an extent that there will not be any overproduction to speak of.

MECHANICAL, according to Mr. Grondal, is quiet. Consumers are not buying except in proportion to their necessary wants, so as to avoid "tying-up" the market. Revised prices will be found in our Market Report.

AMERICAN SULPHITE continues in good demand, but manufacturers are afraid of harassing complications owing to the war troubles. Very little attention is paid to the export trade. The quotation for American sulphite, unbleached, regular grades, is 1¾ to 2c.; selected quality, 2 to 2¼c.; soda, bleached, 1.50 to 2.10c., delivered.

THE official statistics relating to American exports of wood pulp during February show the value to be 54,048 dollars, and for the eight months ended February, 356,490 dollars. It is impossible to make comparison with the movement of last year, as the figures were not then stated separately.

THE United States imported wood pulp during February to the value of 48,852 dollars, as compared with 61,169 dollars for the corresponding month last year; 334,923 dollars and 606,795 dollars, respectively, were the values for the eight months ended February, 1898 and 1897.

THE arrivals at London of Canadian pulp this week included 2,357 bales from St. John, per the s. "Platea," on account of the Maritime Sulphite Fibre Co., Ltd.

THE East River Saw Mill, Sheet Harbour, N.S., is to be replaced by a pulp mill, with four grinders.

MR. G. O. S. CONWAY is organising a company to develop a water power at Grenville, Que., and to erect a pulp mill.

AT Moose River, near Parrsboro, N.S., a project is being pushed for the erection of a large pulp mill on property of 15,000 acres.

THE "Hazeldean," the first vessel to touch at Port Medway, N.S., this season, loaded pulp there for the British market. After taking on 2,400 tons from Charleston and Milton mills, the vessel went to Halifax to take on 1,600 tons more. She is to make five trips across the Atlantic this season, pulp taken on at Port Medway and Halifax forming a considerable part of each cargo.

SEVERAL contracts have lately been arranged for the shipment of pulp wood to Manchester from Nova Scotia and Newfoundland.

THE Takush Harbour Lumber Company, Vancouver, B.C., are considering the establishment of paper and pulp mills on an extensive scale.

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GERMANY.

NEW PAPER MILL IN UPPER SILESIA.—It is reported that Count Guido Henckel-Donnersmarck, in Neudeck, will erect a paper mill in connection with his already existing soda pulp factory. The machinery will not be supplied before the end of the year, so that the new paper mill will not be opened in 1898. The station is Stahlhammer, on the right bank of the Oder Railway.

GOTTLOB KELLER.—A commemoration tablet has been erected at the house where the inventor of wood pulp died. The expense has been borne by the village of Krippen.

THE LOW PRICE OF PAPER is a matter that still occupies the attention of German papermakers. It is stated that many German mills change the quality too often and make from time to time on the same machine superfine and common, thick and thin papers, a policy held to be very unprofitable. No doubt the more a mill concentrates its attention upon one particular kind of paper the better.

GERMAN CHEMICAL TRADE.—The report of the directors of the Chemische Fabrik vorm E. Schering, Berlin, for 1897, has been issued, showing gross profits for the year amounting to 1,337,177 m., and net profits 415,549 m., as compared with 569,900 m. in 1896. It is proposed to distribute the profits as follows: To the reserve fund, 20,937 m. (28,406 m. in 1896); bonuses and commissions, 90,663 m. (131,398 m. in 1896); and as 7½ per cent. dividend, 225,000 m. Last year the dividend was 11 per cent. It is also proposed to pay 4½ per cent. dividend on the 1,500,000 preference shares, a sum of 67,500 m. being appropriated for this purpose. The reserve fund now amounts to 1,765,110 m., or 39·22 per cent. of the working capital. The goods, cash, bills, book debts, etc., to the credit of the company at the end of the year amounted to 4,024,219 m.

A BILL regulating the Commercial relations between the British Empire and Germany has been laid before the Reichstag. The measure authorises the Federal Council to grant until July 30th, 1899, the most favoured nation treatment to the subjects, and products of Great Britain and Ireland, as well as to the subjects and products of the British colonies and dependencies. The premable of the Bill says:—"This provisional arrangement is intended to afford time for negotiations concerning the conclusion of a new commercial treaty. The Federal Council will only be able to make use of the power conferred upon it by the Bill in regard to the British Empire and parts thereof in so far as the conditions of the most favoured nation treatment there shall not undergo any change to the disadvantage of the subjects, and of the export trade of Germany, and particularly so long as the subjects and products of Germany shall not be treated in the British possessions and colonies more unfavourably than those of the British Mother Country. At the same time the exercise of the Federal Council's power will be conditioual upon the Customs duties of the British territories concerned not undergoing any change, whereby the German export trade would be materially prejudiced."

—o—

UNITED STATES.

A FILTER COMBINATION.—The New York Filter Manufacturing Co. have purchased from the Cumberland Manufacturing Co., of Boston, all of the latter's patents and goodwill for the United States and foreign countries, and have also completed an arrangement with the O. H. Jewell Filter Co., of Chicago, whereby the latter pay a royalty for the privilege of manufacturing filters for the Western territory under the patents owned by the New York Filter Manufacturing Co. The "Warren" filter, manufactured by the Cumberland Manufacturing Co., and the most dangerous rival of the "Hyatt" filter, manufactured by the New York Filter Manufacturing Co., thus comes into the hands of the latter company, and by the consolidation of the two interests a powerful combination has been effected. The New York Filter Manufacturing Co. now own three leading types known in the United States, these being the "Hyatt," "Jewell," and the "Warren."

TARIFF DECISIONS.—The Board of United States General Appraisers has rendered the following decision:—17,631. Surface-coated paper, from Sebastien Heilmann, Merseburg, February 24th, 1898. Ordinary glazed paper, colours; entered at 5 marks per 500 sheets, less freight to and charges in Hamburg and 3 per cent. discount. No advance.

CALENDERS.—A patent has recently been granted for improvements in calendering machines to an American inventor, who claims that he is the first to mount a "doctor" on a calender in such a manner as to provide for a lateral body movement toward and from its roll, whereby its alinement may be changed automatically to accommodate the alinement of the roll, and also the first to provide a sector through which the spring acts upon the "doctor," whereby the acting point of the spring may be changed as to its position so as to vary the pressure of the "doctor" upon its rolls.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included:—To London, 1,437 packages; Liverpool, 207 bundles and 27 cases; Leith, 63 packages; Southampton, 101 packages; Bristol, 355 packages and 45 bundles; Dublin, 210 packages; and Glasgow, 358 packages. Shipments to Antwerp were 8 cases and 50 packages; Bremen, 5 packages; Hamburg,

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288 cases; Havre, 61 packages; Marseilles, 64 packages; Argentine, 54 packages; B. Guiana, 55 packages; B. W. Indies, 411 packages; Australasia, 850 packages; Chili, 501 packages; and Mexico, 485 packages and 75 bundles.

RAGS, other than woollen, were imported into the United States during February to the value of 58,601 dols., against 57,539 dols. for the corresponding month of last year; for the eight months, ended February, the value was 476,634 dols., against 388,076 dols. a year ago.

CANADA.

CANADIAN newspapers, which have hitherto been carried by the mails free of charge, will have to pay postage after this year. The Government will distribute them gratis within a radius of ten miles from the place of publication, but for transportation through the mails beyond that distance a postage rate of half a cent a pound will be charged. The change is to come into effect on the 1st of January, and then not entirely. For the first six months of 1899 the rate charged will be only a quarter of a cent per pound, and the full rate of half a cent a pound will come into effect on the 1st of July, 1899. As bearing on the consumption of "news" in Canada, the Postmaster-General's figures, showing the increase in the tonnage of newspaper mail, may be given. In 1889 the mails carried free newspapers to a total weight of 9,000,000 pounds. In 1891 the weight went up to 11,000,000 pounds. In 1897 it had grown to 16,500,000 pounds.

J. AND G. COX, LIMITED.—Registered with a nominal capital of £300,000 in £10 shares. Object, to acquire the business of J. and G. Cox, manufacturers of gelatine and glue, and merchants, and for that purpose to carry out an agreement with Mr. Robert Cox, M.P., of Gorgie, the sole member of the firm. The signatures are:—Robert Cox, M.P.; Geo. Todd Chiene; Wm. Elgin; Andrew M'Cullagh; James M'Cullagh; W. C. Smith; and John Scott Tait, all of Edinburgh.

SEVERAL new volumes have recently been added to Messrs. Ward, Lock and Co.'s series of Shilling Guide Books. These popular guides have been prepared with much care, and every effort has been put forth to make them accurate and trustworthy. They are plentifully illustrated with maps, photographs, and drawings by well-known artists, and are indispensable to the tourist. Every popular resort, and almost every place of historic or picturesque interest in the United Kingdom has been dealt with in this remarkably cheap and comprehensive series, which also includes trustworthy guides to some of the more famous rendezvous of tourists on the Continent—Paris, Switzerland, etc. These are the most carefully edited hand-books for travellers and holiday makers ever issued at the price, and they have had a very large sale.

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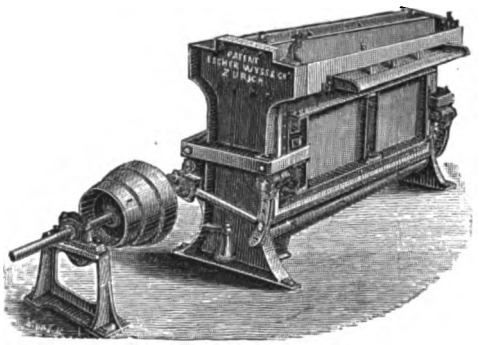

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FRIDAY, APRIL 29, 1898.

The Proposed Combination of British "News" Mills.

THE proposed combination of British "news" mills is not apparently making very rapid progress, although it is reported that various contracts have already been signed. There are many, however, who still believe that it will be a very difficult task to carry the matter to a successful issue. The various meetings in London, we understand, have been held under the chairmanship of Mr. R. W. Perks, M.P., a director of Thomas Owen and Co., Ltd., of Ely Paper Works, Cardiff, and Mr. A. L. Poulter, a director of the London Paper Mills Co., Ltd., is also taking an active interest in the scheme.

* * *

The International Paper Co.

THIS great "news" combine of the United States has been energetically opposed by the New York *World*. There has been some talk of opposition, and reports have appeared that a large "news" mill was to be built, for which the *World* would provide the bulk of the capital. The directors of the International Paper Co. look upon the whole matter as "simply "bluff," believing the object of the various rumours to get a reduced price quoted for the *World's* supply of paper. Some little stir, however, has been created by the following advertisement in the *World*:—"Wanted: A free, anti-trust paper mill. The *World* has paid to the Glens Falls Paper Mill Company, of Glens Falls, N.Y., alone in a period of ten years and nine months 5,438,286·63 dols. This sum did not include the entire paper supply to the *World*. Its payment to the Glens Falls Paper Mill Company alone last year was 941,282·91 dols., and this amount did not include the *World's* entire paper supply for that period. The *World* desires to make a contract for ten years, covering its entire paper supply, with any new mill not in the Paper Trust. It is ready to advance one-half the sum that may be necessary for the construction of a new mill on the basis of a satisfactory agreement." It will be noticed that the number of tons of paper used by the *World* is not stated. If given, together with the value, the average price per lb. or ton could be ascertained, and the nature of the business—profitable or otherwise—gauged to a certain extent. At the present time, owing to the great demand for "news" on account of the war, the mills of the International Paper Company are fully employed, and prices have hardened. Possibly there will in the future be a falling off in the exports of American "news" to Great Britain. The exports of all kinds of paper during February were of the value of 461,473 dols., against 234,005 dols. for the corresponding month of last year; for the eight months ended February the exports were 3,588,594 dols., an enormous increase compared with the corresponding period a year ago, when the value was only 1,909,108 dols.

* * *

Gigantic Wall Paper Trust in the United States.

ANOTHER gigantic wall paper trust, involving an output of product amounting to 200,000,000 dols. yearly and a net increase in profits of 10,000,000 dols. per annum has been finally consummated. Negotiations for the deal have been in progress during the past three months between the National Wall Paper Co., or present trust, and the outsiders who have been fighting it so long. Amalgamation has now been agreed upon, and the arrangement is to go into effect on the first of next month. It is understood that the "pool" is to be on the basis of profits over and above existing prices, and according to the producing power of those who are in it. All of the outsiders have agreed to enter, with the exception of three small concerns, which will not amount to anything. It is a play or pay arrangement. Six thousand dollars are to be allowed for each producing machine in the factories whether it is worked or not. Over and above this a percentage is to be awarded to

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each manufacturer according to what he produces. It is proposed that there shall be an average increase of 5 per cent. in the price of all the paper produced. On the total output, which is said to amount to 200,000,000 dols., the net increase of profits will be 10,000,000 dols.

* * *

The Foreign Trade of Japan.

THE returns of the Japanese Customs for the past year show a further extraordinary increase in the foreign trade of the country. In round figures the imports and exports last year amounted to 382½ million dollars, against 289½ millions in 1896; an increase of more than 32 per cent. In 1888 the total value was 131 million dollars, so that Japanese trade may be said to have trebled in the last ten years; between 1880 and 1884 the total was between 62 and 67 million dollars, or about a sixth of its present volume. The imports last year showed an increase of 48 million dollars, of which 21¾ millions were due to increases in raw materials and machinery. The figures as to the part taken by Japanese merchants (*i.e.*, without the intervention of foreign merchants in Japan) in the foreign trade of the country are interesting. In 1888 the direct exports by Japanese merchants amounted to 11 per cent. in a total of 63¾ million dollars; in 1897 it was 27 per cent. in a total of 163 millions. In imports the figures are even more striking; for while in 1888 the direct imports by Japanese merchants amounted to less than 13 per cent. in a total of 65½ million dollars, last year they reached 36 per cent. in a total of 219½ millions; or, taking the total trade, Japanese in 1888 did 12 per cent. of a trade of 131 million dollars, and in 1897, 32 per cent. of 382½ millions. Further the figures show how Japan becomes more and more a manufacturing country, and imports larger quantities of machinery and raw materials, and less manufactured goods. They show also how closely Japan approaches China in the volume of its foreign trade. In 1896 the foreign trade of China was 445 million dollars, while that of Japan last year was over 382 millions. The trade of China has increased not quite threefold in the last 30 years; that of Japan has increased more than sixfold in 20 years. The revenue derived by China from foreign trade is 6½ per cent. of the trade; that of Japan less than 2½ per cent.

Stocks and Shares.

The market for paper mill shares continues to be rather quiet, and few changes are noticeable. Darwen are ¼ better on buying orders, but Star ord. and Roach Bridge are down ¼ since last week. The latter are still offering in rather large quantities by investors having got their profit on the recent rapid advance now selling out. Waterlow and Sons ord. (both issues) are down ½.

Bowman, Thompson ord. have had another collapse, and have been as low as 6½, but are now better at 6¾—7. There is no reason for the heavy fall, and they no doubt will again get back to their former price. United Alkali debs. are very depressed, and are marked 1¼ lower; the pref. also are ⅛ below last week's quotation. Castner's have advanced still further 1s., and Brunner, Mond pref. are ¼ better.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices April 27th.
10	10	Bath Paper Mill Co. (Ld.)	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	12—13
3⅛	5	Burnley Paper Co. (Ld.)	10	6—6¼ x.d.
7	7	Bury Paper, ord. ,,	6	6¼—6⅝
7	7	do. 6% pref. ,,	6	7⅛—7⅜
2⅝	3	Collin (Darwen) Paper ,,	nil	4/6—5/6
3¾	5	Darwen Paper Co. ,,	15	9—9½
10	10	E. Lancashire Paper Co. ,,	nil	8—8½
10	10	do. do. 6% pref.	nil	8¾—9¼
5	5	do. do. bonus	nil	4—4½
100	100	Ekman Pulp & Paper Co. Ld. debs.	4½	95—97
4	5	Hartlepool Pulp & Paper ,,	10	7—7¼
5	5	Hyde Paper Works Co. ,,	nil	1⅛—2
2½	5	Kelln'r-Part'g't'n P'p Co,,	15	7⅛—8⅛
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	104—108
4	5	N. of Ireland Paper Co. ,,	12½	9⅛—9⅜
7	10	Olive Brothers ,,	10	7½—7¾
1	1	Owen, T. & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
5	5	Peebles (A. M.) & Son ,,	8½	7⅛—7⅜
5	5	do. 5% cum. pref.	5	6⅛—6½
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	6⅞—7¼
1	1	do. do. cum. pref.	5	1—1⅛
4½	5	Roach Bridge Paper Co. ,,	10	5⅛—5¼
5	5	Star Paper Co.	10	8½—9
3	5	do. do. cum. pref.	10	6¼—6⅜
10	10	Waterlow & Sons non.-cum. def.	—	13¾—14¼
		do. do. non.-cum. pref.	4	13¾—14¼
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7⅛	6¼—7
10	10	do. do. cum. pref.	7	10⅛—10¾
100	100	do. do. debs. (red. 1904)	6	104—100
10	10	Brunner, Mond & Co. (Ld.)	20	41¾—42
3½	10	do. do. "New" ,,	20	16⅝—16⅞
10	10	do. do. 7% pref. ,,	7	17⅞—18⅛
5	10	do. do. do. new issue	7	8⅛—8¼
1	1	Castner-Kellner Co. ,,	—	21/6—22/-
5	5	Clayton Aniline cum. pref.	6	5⅞—6¼
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅜—11⅝
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	28/—29/-
10	10	do. do. cum. pref. ,,	7	7⅜—7⅝
100	Stock	do. mort. deb. (red. after 1901)	5	107—107½

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Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various Cwts.
AUSTRALASIA	3859	489	483
ARGENTINE	—	—	16
AFRICA	89	48	47
BELGIUM	75	9	10
B. W. INDIES	—	—	12
CAPE COLONY	248	208	447
CANADA	—	19	16
CHINA	66	50	114
DENMARK	—	—	—
EGYPT	—	17	7
FRANCE	770	87	—
GERMANY	—	—	28
GIBRALTAR	—	8	6
HOLLAND	—	13	83
INDIA	1589	304	78
JAPAN	468	78	—
MAURITIUS	18	—	27
NEW ZEALAND...	300	594	404
PORTUGAL	—	—	46
SPAIN	—	21	35
SWEDEN	—	39	12
S. AMERICA	—	58	—
S. SETTLEMENTS ...	11	—	22
U.S.A.	120	—	—
W. INDIES	321	6	22

FROM GLASGOW.

AFRICA	31	57	—
CHINA	73	—	21
HOLLAND	—	—	341
INDIA	—	20	61
JAPAN	713	—	—
NORWAY	—	—	1
NEW ZEALAND... ...	—	—	37
SPAIN	—	—	31

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

500 b	Newport, M.	London	13 b	Antwerp	Liverpool
2087 ,,	Amsterdam	,,	1372 ,,	Rotterdam	,,
480 ,,	Ghent	,,	111 ,,	New York	,,
200 ,,	Amsterdam	,,	372 ,,	,,	,,
4850 ,,	Rotterdam	Manchstr			

WOOD PULP BOARDS.

400 b	Hamburg	Leith	70 b	Hamburg	London
511 ,,	New York	Liverpool	27 c	Boston	Bristol
53 ,,	Hamburg	London			

MILLBOARDS.

7318 b	Harlingen	Hull	120 b	Hambro	Goole
3027 ,,	Delfzyl	Goole			

PASTEBOARDS.

2982 b	Harlingen	Leith	80 b	Hango	London
1 c	Hamburg	,,	200 ,,	New York	,,
6299 b	Harlingen	,,			

b—bales. c—cases. r—rolls. cr—crates.

THE PAPER TRADE REVIEW is a widely informed and well-managed enterprise, of great value to exporters for its exact Market Reports and statistics of Raw Material.—*Blatt fur die Papier-Fabrikation*, Dresden.

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	23	—	—
BELGIUM	1314	7	—
CANADA	—	1	—
DENMARK	65	—	—
FRANCE	1181	64	—
FINLAND	620	—	—
GERMANY	2210	33	206
HOLLAND	14935	14	—
ITALY	30	—	—
INDIA	—	11	—
NORWAY	497	—	308
SWEDEN	2182	—	77
U.S.A.	1279	34	404

Including the Following:—

Quantity	From	Importer	Port
53 bales	Copenhagen	J. Spicer and Co	London
6 ,,	,,	R. Ulrich	,,
27 ,,	Danzig	Elkan and Co	,,
25 ,,	Gothenberg	J. Eberstein	,,
53 ,,	,,	G. Schenkenwald	,,
40 ,,	,,	Tough and Co	,,
7 ,,	,,	Brown, Brough and Co	,,
21 ,,	,,	Crabb and Co	,,
144 ,,	,,	Alsing and Co	,,
60 ,,	,,	R. L. Lundgren	,,
5 ,,	,,	Becker and Wagner	,,
6 ,,	,,	Claydon and Co	,,
5 ,,	New York	Wyckoff and Co	Southampton

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SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

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LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

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MILLWRIGHT and ENGINEER.—A first-class man for large Paper Mill, good inducement to a really competent, steady man.—Apply, with copy testimonials, to James Bertram and Son, Ltd., Leith Walk Foundry, Edinburgh. 7262

WANTED, Youth accustomed to reeling news at quick speed.—Apply, with fullest particulars, to Fisher and Co., Tamworth. 7264

Situations Wanted.

EXPERIENCED MANAGER open to Re-engagement; 26 years' experience in management of hand-made paper mills.—Address, No. 7,260, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7260

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

PAPER and Paper Bag Making.—Gentleman with long experience in large mill making Shops and Caps, etc., and all kinds of Paper Bags, and with a good connection, is open for engagement as Secretary, Cashier, or Traveller. Unexceptionable testimonials and references.—Address, No. 7,237, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe Lane, London, E.C. 7237

PAPERMAKER is open to take an engagement as Working Foreman, making common and M.G. Browns, also Rope Browns, having had 11 years experience in last situation.—Address No. 7,247, office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7247

WANTED, Situation in Paper Mill as MILLWRIGHT or FITTER.—Address, No. 7,261, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7261

Miscellaneous.

A FIRST-CLASS PAPER FACTORY in Sweden wants a Clever Agent for London, well acquainted with the paper trade, for the sale of its production of paper for newspapers and wall paper.—Address "Papersagent," c/o S. Gumaelii Annonsbyra, Stockholm (G. 62138). 7255

CORRESPONDENCE with first-class London firm desired by an Agent in Christiania with knowledge of Norwegian export paper trade. First-class references.—Address, Christiania, No. 7,258, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7258

ESTABLISHED London Agent, with central and commodious offices and an excellent connection amongst the best buyers of Browns, Rope Browns and Sulphites, both in London and the provinces, is open to negotiate with a mill making either of these grades, with a view to efficient REPRESENTATION.—Address, in strict confidence, Veritas, No. 7,259, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7259

FACTORY SITES.—For Sale, Several Central Sites. Every facility given to purchasers. Cottages built for workmen; favourable situation for transport of goods; junction of five different railways; also water carriage.—For full particulars, apply F. H. Cooke, Land Agent, Peterborough. 7250

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

PAPER MILL FOR SALE.—Brown Paper Mill in Scotland, 64 inch machine, steam and water power.—Particulars on application to No. 167, Keith & Co., Advertising Agents, Edinburgh. 7263

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Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester, Runcorn Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams

Telegrams—"STONHILL, LONDON."

CHEMICALS.—The market is quiet and some materials are likely to be affected owing to the war between the United States and Spain. AMMONIA ALKALI is firm at £4 5s. BLEACHING POWDER is unchanged at £5 5s. to £5 7s. 6d. for soft wood, and £6 for hard wood. CAUSTIC SODA evidences a drooping tendency and for export 5s. per ton lower is quoted. SODA CRYSTALS stand at £2 17s. 6d. f.o.b. Tyne, RECOVERED SULPHUR at £4 15s., and SALT CAKE at 20s. per ton in bulk on rails.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½%	5 5	0
,, ,, barrels	...	,, ,,	2½%	5 15	0
,, ,, tierces	...	,, Hull	2½%	5 2	6
,, ,, ,,	...	Goole	2½%	5 2	6
,, ,,	...	f.o.b. Glasgow	2½%	5 5	0
Alum Lump) ,,	...	f.o.b. Liverpool	2½%	4 12	6
,, ,, barrels	...	,, ,,	2½%	4 15	0
,, ,, tierces	...	,, Hull	2½%	4 12	6
	...	Goole	2½%	4 12	6
,, ,, ,,	...	London	2½%	5 2	6
,, ,, ,,	...	f.a.s. Glasgow	2½%	4 12	6
Alumina Sulphate	...	f.o.b. Tyne	net	3 12	3
Aluminoferric Cake, slabs		Liverpool...	...	2 15	0
,, ,, tierces		,, ...	...	3 2	6
Alumina Cake, ... slabs		Glasgow ...	...	2 10	0
Blanc Fixe	...	f.o.b. Tyne	net	6 17	6
Bleach, ...	...	,, ,,	net	6 0	0
,, (soft wood)	...	f.o.r. Lancs.	net	5 5	0
,, (hard wood)	...	f.o.b. Liverpool	net	6 0	0
,, (soft wood)	...	landed London	net	6 5	0
Borax (crystals) ...	...	... ...	net	14 10	0
,, powdered ...	...	... ...	net	15 0	0
Chloride of Barium	...	f.o.b. Tyne	net	6 15	0
Caustic White 76%	...	f.o.b. Liverpool	net	8 7	6
,, 74%	...	,, ,,	net	8 2	6
,, 70%	...	,, ,,	net	7 10	0
,, 70%	...	f.o.r. Lancs.,	net	7 7	6
,, 60%	...	f.o.b. Liverpool	net	6 10	0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5 15	0
,, 60%	...	f.o.b. Liverpool	net	5 17	6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4 12	6
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4 15	0
,, ,, 48%		,,	net	4 12	6
,, ,, 58%		f.o.r. Widnes	net	4 10	0
,, ,, 48%		,, ,,	net	4 5	0
,, Ammonia 58%		f.o.b. Liverpool		4 5	0
,, ,, 48%		,,		4 0	0
,, Caustic 48%		,,		4 12	6
,, ,, 57-58%		,,		4 17	6
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		5 0	0
10-ton lots		ex ship Liverp'l	net	5 5	0
Acid	...	f.o.b. Liverpool	3½%	per lb	3
ke	...	on rail, in bulk		1 0	0
monia (1sts)	...	f.o.b. Liverpool		35 0	0
(2nds)	...	,,		33 0	0
Soda Crystals		f.o.b. Tyne	net	2 17	
,, ,, ...		ex ship Thames	2½%	2 17	6
,, ,, ...		f.o.b. Liverpool	5%	3 0	0
Sulphur, roll		f.a.s. works	2½%	8 5	0
,, flowers		,, ,,	2½%	7 5	0
,, recovered ...		,, ,,	2½%	4 15	0
Sulphate of Ammonia ,,		,, ,,	2½%	8 10	0
,, of Copper ...		,, Liverpool	5%	16 10	0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	4	10	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15	0
Blanc Fixe (c.i.f. London)		7	0	0
White Sugar of Lead	£6 0 0—£7	0	0	
Zinc Oxide		19	5	0
Bleaching Powder		5	15	0

CHEMICAL WOOD PULPS.—There is a fair enquiry for SULPHITE and makers are firm in their quotations. SODA pulps are in steady demand.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8	12	6	to 9	0	0
,, Superior ,, ...	9	5	0	,, 9	10	0
,, Bleached, ...	11	10	0	,, 15	0	0
SODA, Unbleached, Common ...	8	5	0	,, 8	10	0
,, Extra...	8	15	0	,, 9	5	0
,, Bleached	10	10	0	,, 12	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 130 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

BISULPHITE, Unbleached, dry, 1st quality ...Frs.	22.75	to	23.5
,, Bleached...	33	,,	36
SODA AND SULPHATE, Unbleached, 1st. quality	22	,,	22
,, ,, ,, 2nd quality	19	,,	19 50
,, ,, ,, Bleached	27	,,	34

AMERICAN QUOTATIONS

AMERICAN SULPHITE, Unbleached	$2.½ to 2	
,, SODA Bleached	1.90	2.10
FOREIGN SODA, Unbleached ...	2.15	2.10
,, ,, Bleached	2.70	2.80c.
,, SULPHITE, Bleached...	3.15	,, 3.50c.

MECHANICAL WOOD PULPS.—The market shows a stronger tone. The Scandinavians evidently think that Canadian as well as American pulp will not be shipped in such large quantities as hitherto owing to the difficulties created by the war, and consequently they have adopted a firmer policy, demanding a higher price again both for Moist and Dry Pine. The quotation for the former is £2 5s. and the latter £4 8s. 9d.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£6	10	0	
Pine, Dry	£4	8	9	to 4 12 6
,, Moist	2	5	0	,, 2 7 6
Brown, Dry	4	15	0	
,, Moist	2	10	0	

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt)

Pine Pulp, 50% moisture, ordinary ...	Frs. 9.50	to	10.50
,, ,, fine ...	11	,,	12
,, dry, ordinary	10.50	,,	11
,, ,, fine	11	,,	12
Aspen ,, fine	15	,,	16.50
Half-Chemical Brown, 50% moisture	10.75	,,	11.25
,, ,, dry ...	11 75	,,	12.25

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $13

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
406 bales	Hambro		London
680 ,,	,,		,,
4158 ,,	Arendal	Becker & Co	,,
2950 ,,	Skein	,,	,,
250 ,,	,,	H. Lloyd Ltd	,,
1085 ,,	Antwerp		,,

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Quantity	From	Importer	Port
822 tons	Helgenas		,,
272 bales	Gothenburg	H. Pearsall	,,
14 ,,	,,	J. Light	,,
137 ,,	,,	Green and Co	,,
321 ,,	,,	Aising and Co	,,
112 ,,	,,	R. L. Lundgren	,,
165 ,,	,,	Spicer Bros	,,
2357 ,,	St. John's	Maritime Co.	,,
1087 ,,	,,		,,
577 ,,	Hango		,,
94 ,,	Hambro		,,
76 ,,	Amsterdam		,,
18 cases	Philadelphia		,,
3266 rolls	Antwerp		,,
1000 bales	Konigsberg	E. & W. Goldsmith	,,
285 ,,	Hamburg		,,
140 ,,	Ghent		,,
149 ,,	Rotterdam		Liverpool
80 ,,	Ghent		,,
134 ,,	Hango		Hull
20 ,,	Ghent		Manchester
41 ,,	Rotterdam		Leith
276 ,,	Copenhagen		,,
1219 ,,	Halifax		Glasgow
100 ,,	Ghent		,,
4830 ,,	Holmestrand		Grangemouth
306 ,,	Hamburg		,,
500 ,,	Christiania		,,
50 ,,	Rotterdam		,,
270 ,,	Christiania		Dundee
620 ,,	Arendal		Preston
3321 ,,	,,		,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	1425 bales	HOLLAND ...	317 bales
,, ...	3366 rolls	NORWAY ...	16819 ,,
CANADA ...	4663 bales	PRUSSIA ...	1000 ,,
DENMARK ...	296 ,,	SWEDEN ...	1020 ,,
FINLAND ...	641 ,,	,, ...	822 tons
GERMANY ...	1971 ,,	U.S.A.	18 cases

ESPARTO.—A further amount of new crop Spanish business has been done and the enquiry from consumers is maintained, but not so readily responded to by sellers in view of the relations between Spain and America. African firmer and less disposition on shippers part to offer freely.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—Fair to Good	£4 15 0	to	5 2 6
,, Fine to Best	5 6 3	,,	5 12 6
Oran — Fair to Good	3 17 6	,,	3 0 0
,, First Quality	3 2 6	,,	3 5 0
Tripoli — Hand-picked	2 17 6	,,	3 0 0
,, Fair Average	3 12 6	,,	3 15 0
Bona & Philippeville	3 2 6	,,	3 5 0

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
2368 trusses	Almeria		Grangemouth
400 tons	,,	H. Ottomann	Granton
510 ,,	,,	Morris and Co	Methil
1290 trusses	Agulias		Grangemouth
430 tons	,,	H. Ottmann	Glasgow
2033 bales	Bona		Leith
1100 tons	Tripoli	Brown, Stewart	Greenock
600 ,,	Oran	Morris and Co.	,,

STRAW.—Prices:

Oat Straw, ...	c.i.f. London	37/0 ;	f.o.r. Goole,	37/6
Wheat ,, ...	do.	37/0 ;	do.	37/6
Rye ,, ...	do.	50/6 ;	do	50/0

STRAW PULPS.—Moderate demand. The imports this week included 26 bales from Harlingen landed London.

Prices, c.i.f. London, Hull or Leith.

German, dry, No. 1	£14 0 0
,, No. 2	£13 0 0

COTTON FLOCKS.—Fine quality is quoted at £2 10s. per ton at works.

JUTE.—Prices:

Good Wht	£15 0 to £16 10	Common	£7 10 to £9 0
Good	£13 0 to £14 10	Rejections	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings	£3 0 to £4 0

FOREIGN RAGS.—There is a good demand for French stock. German and Dutch packers report business quiet. Week's arivals at British ports were as under :—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
40	Marseilles	Hull	102	Amsterdam	Goole
185	Leghorn	,,	154	Hambro	,,
52	Konigsberg	,,	455	Dieppe	Grimsby
37	Bremen	,,	14	Rotterdam	Leith
58	Bordeaux	,,	38	Amsterdam	,,
23	Rouen	,,	18	Bremen	,,
41	Danzig	,,	14	Hambro	,,
61	Harlingen	,,	397	Ghent	,,
20	Hambro	,,	23	Copenhagen	,,
15	Rouen	London	7	Christiania	Grgmth
50	Ghent	,,	69	Jersey	Southamptn
10	Rotterdam	,,	26	,,	,,
59	Stettin	,,	23	,,	,,
32	Hambro	,,	8	Guernsey	,,
36	Amsterdam	,,	57	St. Nazaire	Newhvn
126	Treport	,,	10	Dieppe	,,
61	Dunkirk	,,	57	Caen	,,
59	Ghent	Goole	238	Alexandra	Liverpool
238	Boulogne	,,	95	Bordeaux	,,
127	Dunkirk	,,			

Totals from Each Country:

BELGIUM ...	506 bales	GERMANY ...	377 bales
CHANNEL Isles	126 ,,	HOLLAND ...	261 ,,
DENMARK ...	23 ,,	NORWAY ...	7 ,,
EGYPT	238 ,,	PRUSSIA ...	52 ,,
FRANCE ...	1364 ,,	SPAIN ...	185 ,,

BELGIAN RAGS.

.o.b .Ghent. Freights: London, 8/0; Hull and Goole, 12 6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/6
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/6	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/6	Old Bagging (solid	3/6
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/0	White & Cream Linen	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/6
Seconds No. 4 ...	8/0	Unbleached Cutt'gs	21/0
Prints (Light ...	8/6	Print Cuttings ...	8/6

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope coils)	8/0	Not ree from wood	5/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto...	7 0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	10/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares... ...	8/0
White Rope... ...	6/0	Jute, No 1 6/0; No. 11	5/0

STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/0	LFB (Blue)	4/0
SPF	11/0	CSPFFF	10/0
FF	8/0	CSPFF	16/0
FG	8/6	CFB (Blue)	/0
FFX	7/0	CFX (Coloured) ...	4/0

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FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Bl e Linens... ...	7/6
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/0
Coloured Cotton ..	3/6	,, Stay ,,	15/0

PRUSSIAN RAGS.

O.i.f. London, Hull or Leith.

SPFF	16/0	CC (Cotton)	4/0
SPF	12/6	Jute I	3/6
FG	10/0	,, II...	2/0
LFB	8/0	Rope I...	8/9
FF	5/6	,, II ...	6/0

NORWEGIAN RAGS.

O.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	and Canvas ...	7/0
and ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/c

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons... ...	1/3	,, Small... ...	4/6
Coloured ,, ...	1/3		

* ,, at Smyrna and Salonica.

HOME RAGS.—LONDON: Business quiet.—BRISTOL: Fair enquiry.—MANCHESTER: Market dull.—EDINBURGH and GLASGOW: Steady trade; prices firm.—DUBLIN: Moderate demand.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/c
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected) ...	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country do. ...	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country do. ...	2/0	Gunny	2/0-2/3

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	2/6-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/6
Outshots	12/0	W. Manilla Rope	7/0
Mixed Fines...	14/0	Tarred Manilla Rope	5/6
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Canvas (best)	15/0	Bagging...	2/3
2nd	8/	,, (clean)...	3/0-4/0

GLASGOW.

Fines	12/6-16/c	Canva No. 1.	15/0
Blues	4/6	,, No. 2.	10/0
Common Blues... ...	3/3	Manilla Rope	8/c
Bagging	4/0	Tarred Hemp	

DUBLIN.

Whit Cuttings ...	16/0	Mill Bagging	2/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp	6/0
Light Prints	2/6	Rigging	10/0
Black do.	1/6		

WASTE PAPERS.—Market firm. Prices:

Cream Shavings ...	10/0	Small Letters ...	3/3
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns	3/3
White Waste ...	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/0
Blue Paper	2/0	Strawboard Cuttings	1/0
Crushed News	2/0	Jacquards	2/6

For Export: 2s/- per ton extra.

STARCH.—Maize shows an advance; Crisp being quoted £9 10s.; Pearl, £7 5s., and Powder £7 15s.

F.o.r. London, less 2½%

Maize—Crisp, £9 10/-; Pearl, £7 5/-; Powder, £7 15/o
Special £14.
Farina—Prime, £12 0/-; B.K.M.F., £14 0/-.
Delivered, less 2½%:
Rice—Special (in chests), £19 0/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.
Dextrine—£1

SIZING.—A steady trade is being transacted at firm quotations.

English Gelatines per cwt.	90/o	to	120/o
Foreign ,, ...	70/o	,,	100/o
Fine Scotch Glues	45/o	,,	6c/o
Long Scotch Glues	35/o	,,	40/
Common Black ,, ...	25/o	,,	28/o
"Town" Glues	38/o	,,	45/o
"Bone" Glues	26/o	,,	3c/o
Foreign Glues	28/o	,,	35/2
Bone Size	5/6	,,	10/o
Gelatine Size	6/6	,,	10/o
Dry B.A. Pieces	50/o	,,	55/o
,, English Pieces	35/o	,,	45/o
Wet ,, ,, ...	8/6	,,	9/o
,, Sheep Pieces	3/o	,,	4/o
Buffalo Hide Shavings	32/o	,,	40/o
,, Picker Waste	22/o	,,	35/

ROSIN.— Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
4/9	4/10½	5/o	5/1½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS.—Moderate demand.

Mineral Black ...	cwt. 3/6	PASTE COLOURS will	
do. superior ...	,, 4/o	60% of colour, as follows	
Pure Ivory Black	,, 12/o	Orange Pulp ...	cwt. 40/o
Ochre	,, 2/3	Golden Yellow Pulp	30/o
French J. C. Ochre	ton 60/o	Lemon ,, ,,	cwt. 30/o
Chrome (pure) ...	cwt. 40/o	Prussian Yellow ..	36/o
Red Oxide	,, 4/6	Green (free of arsenic	26/o
Umber, Devonshire	,, 50/o	Paste Blue, 20% ...	18/o
do. Turkish ...	,, 40/o	,, 33% ; 26/o ; 45%	45/o
Lamp Black ...	,, 5/o-7/6	Imperial Yellow (dry	16/o
Ultramarine (pure)	35/o-45/c	(less 2½% d/d)	
Cochineal	lb. 4/3-9/c		

MINERALS.—The demand for CHINA CLAY is steady and prices are firm. FRENCH and ITALIAN CHALKS are in request and there is a good trade passing in SNOWDRIFT, SATINITE, PATENT HARDENINGS, and MINERAL WHITE.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine... ...	18/o less 2½% ; del. Lancashire...		38/o
Pottery Super.	24/o ,, ,, ...		34/o
Ball Seconds ...	20/o ,, ,, ...		30/o
Seconds	15/o ,, ,, ...		25/o
Thirds	11/o ,, ,, ...		21/o

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 9/o to 23/6, bags 4/o and casks 9/6 per ton extra; delivered Lancashire 38/o to 41/6 (for best papers); f.o.r. London, in casks 45/o per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/o.

French Chalk. W.E., W.I.N.S.E.R., W.O. and other brands, 58/o, 64/o, 73/6, and 75/o per ton, according to quality less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15'o to £5 2/6 per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-,

Patent Hardening (2 ton lots) f.o.r. Lancs., £3 5/o.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.

Magnesite (in lump) 39/6 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £14 to £14 12/6.

Sulphate of Barytes, No. 1, 64/o; 2, 52/o; 3, 42/o; 4, 37/6, per ton, according to quality.

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Bauxite, minimum alumina, 60%, 16/3 f.o.b.
Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.
Satinite, £3 to £3 6s. 6d., in casks, f.o.b Liverpool or Manchester.
Whiting, f.o.b., 10/6 to 12/3 per ton.
Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.
Hydrate of Alumina, £12 10/0.

LIME—The present price is 10/6 per ton f.o.r.

METALS. — LONDON: COPPER firm; TIN shows an advance; LEAD strong. Tuesday's official closing prices:—

	£ s. d.	£ s. d.
COPPER—		
G.M.B., cash	52 11 3	—52 16 3
,, three months	53 1 3	—53 6 3
Tough	55 10 0	—56 0
Best selected	56 10 0	—57 0
Strong Sheets	63 0 0	—
TIN—		
Fine foreign, cash	65 13 9	—66 3
,, three months	66 8 9	—66 18
LEAD—		
Spanish...	13 10 0	—13 13 0
English...		13 17 6

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Competition in the Wood Pulp Trade.

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—In your issue of 1st inst., I notice an interview with "An American Expert" in reference to the effect of American and Canadian competition upon the Scandinavian wood pulp trade. I have no doubt that this gentleman spoke from experience when he referred to the ability of the U.S. manufacturers to compete, but when he went further and stated his opinion, "that neither the States nor Canada can successfully compete with a good chemical or mechanical pulp mill in Scandinavia," he evidently went out of his province.

The suggestion conveyed by this remark is undoubtedly that manufacturing operations in the States and Canada are conducted on the same basis as to supplies and labour, but this, as everyone knows who is interested in the trade in this country, is entirely wrong. It does make considerable difference in manufacturing operations when one pays three times as much for his wood and one-third more for his labour as compared with his competitor, and yet these proportions represent as nearly as possible the comparative conditions under which the U.S. and Canadian pulp businesses are conducted. While our U.S. friend, therefore, no doubt had good reason to state that the U.S. manufacturers would not be able to compete with a good chemical or mechanical mill in Scandinavia, yet he was entirely beside the mark when he placed Canada in the same category.

The manner in which the British papermaker has held, and continues to hold, such a large proportion of the British paper trade, in spite of his great disadvantages as a purchaser of Scandinavian wood pulp, shows that he is well able to investigate and come to his own conclusions, and if he will only investigate on the spot, he will come to very different conclusions from those advanced by your informant.

Under present circumstances, when the greater proportion of the U.S. "news" which is going to Great Britain and into our colonies, is manufactured from cheap Canadian wood, and when the *U.S. manufacturers have nothing so much to fear as a direct connection* between the Canadian spruce supply, combined with its magnificent water powers, and the British paper trade, it must remain, of course, good policy on their part to deprecate the possibility of closer connections between the two.

Yours respectfully,

CANADIAN MANUFACTURER.

Montreal,

April 13th, 1898.

THE

Combine of Papermakers in Spain.

In a recent issue we recorded that the papermakers of Spain had decided upon combination, as local and foreign competition had caused prices to go to a most unprofitable level. The following rules have been adopted :—

A.—Paper is sold by weight.

B.—The ream contains 500 sheets; the weight of reams is given in kilogrammes, and that of paper in rolls in grammes per square meter.

C.—The size of the sheets and width of the rolls is given in centimeters and half centimeters. The weight of reams is given in round kilogrammes, and the weight per square meter in round grammes.

D.—The minimum weights for the papers most generally used are fixed as follows:—Printing paper, white, 43 grammes; printing paper in popular colours, 40 grammes; ordinary calendered paper in sheets, 48 grammes; writing paper, 50 grammes; uncalendered printing paper in rolls, 45 grammes; calendered printing paper in rolls, 55 grammes; ordinary chamois tissue for oranges, 12 grammes; white tissue, 15 grammes; uncalendered straw paper in ordinary colours for match boxes, 40 grammes; white straw paper, 40 grammes; gray and leather-coloured straw paper, 50 grammes; brown wrapping, calendered, 70 grammes; English calendered paper, 70 grammes; calendered wood fibre paper, 70 grammes; manilla, 27 grammes.

E.—For papers of standard weight a deviation of 3 per cent. above or below the weight called for is allowed. For wrapping paper, 4 per cent. Sheets of different weight in a ream do not justify rejection of paper.

F.—Slight differences in purity of stuff, strength and colour do not constitute reasons for rejection.

G.—White printing papers are half sized unless differently ordered.

H.—Not less than 500 kilogrammes are made of any size, weight and quality. The purchaser has to submit to an over or short delivery of 10 per cent. on orders of more than 1,000 kilogrammes; for smaller orders 15 per cent. are allowed.

I.—Laid papers and papers with water marks are charged at 10 per cent. additional. The price of seconds is 10 per cent., and that of thirds 20 per cent. lower than for first quality.

K.—Paper in reams is sold by gross weight. The wooden or iron cores shipped with rolls remain the property of the manufacturer, the purchaser has to return them or pay for them at a rate previously agreed upon.

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40 ,,	,,	Scovill Mfg. Co	,,
20 ,,	,,	J. W. Hampton	,,
44 ,,	,,	P. Ruttmann	,,
5 ,,	,,	Knauth, Nachod & Co	,,
4 ,,	,,	Sheldon and Co	,,
12 ,,	,,	Borgfeldt & Co	,,
21 ,,	,,	Kupfer Bros	,,
15 ,,	,,	Merchants' Despatch	,,
9 ,,	,,	O. F. Melvin & Co	,,
31 ,,	,,	Stiner and Co	,,
5 ,,	,,	De Jonge and Co	,,
40 ,,	,,	J. W. Hampton	,,
1 bale	,,	Valentine Schmidt	,,
9 cases	,,	Neuss, Hesslein & Co	,,
4 ,,	,,	Vandergrift and Co	,,
1 ,,	,,	J. P. Daleiden	,,
5 ,,	,,	Dennison Mfg. Co	Boston
6 ,,	Hull	J. Hunter	New York
3 ,,	Hamburg	Hug & Boshowitz	,,
7 ,,	,,	De Jonge and Co	,,
13 ,,	,,	Dingelstedt and Co	,,
8 ,,	,,	M. Speigel	,,
1 ,,	,,	G. Median	,,
30 ,,	,,	Druckleib and Co	,,
14 ,,	,,	Devoe & Reynolds	,,
4 ,,	Liverpool	Kupfer Bros	,,
5 ,,	,,	Hempstead and Co	,,
2 ,,	London	Cobb, Bates and Terxas	Boston
20 ,,	,,	Atkins and Co	,,
71 ,,	,,	Dickinson and Co	New York
1 ,,	,,	Kueffel and Esser	,,

CHEMICAL FIBRE.

25 tons	Antwerp	R. Helwig	New York

MANILLAS.

130 bales	Antwerp	Castle and Gotheil	New York
197 ,,	Hamburg	Salomon and Co	,,
276 ,,	London	Butterworth and Co	Boston
130 ,,	Liverpool	Schulz and Ruckgaber	,,
42 ,,	,,	,,	,,

RAGS.

70 bales	Antwerp	Salomon and Co	New York
239 ,,	,,	A. Katzenstein	,,
37 ,,	,,	Perkins, Goodwin	,,
480 ,,	,,	Castle and Gotheil	,,
156 ,,	,,	Train, Smith and Co	Boston
93 ,,	,,	Salomon and Co	,,
2 ,,	,,	Dutton and Co	,,
17 ,,	Bremen	Train, Smith and Co	N. York
738 ,,	Hamburg	Salomon Bros.	,,
105 ,,	,,	,,	,,
41 ,,	,,	Train, Smith and Co	,,
40 ,,	,,	To order	Philadelphia
173 ,,	Hull	J. Pirnie	New York
196 ,,	,,	Castle and Gotheil	,,
524 ,,	,,	Butterworth and Co	Boston
134 ,,	Liverpool	,,	,,
376 ,,	,,	,,	,,
45 ,,	,,	J. Pirnie	New York
9 ,,	,,	Kennedy and Moon	,,
275 ,,	London	Butterworth and Co	Boston
89 ,,	,,	Train, Smith & Co	,,
257 ,,	Rotterdam	Jessup and Moore	New York
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125 drums	Hamburg	Roessler & Hasslacher	N. York
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20 ,,	,,	Troy Laundry Co	,,
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THE "Ideal" Gas and Oil Engines

THE practical utility of gas and oil engines as motors has long passed out of the region of speculation. The excellent results given by the best types, and their economy and convenience in working, have combined to attract the attention to them, alike of engineers and power-users, in a marked degree. The outcome of this is that in the newer designs which have been introduced, most of the shortcomings which were characteristic of the older forms have been remedied, and their efficiency correspondingly increased. There are now quite a host of different types of gas and oil engines in the market, and whilst these vary to an important extent in many cases in matters of detail, the generally accepted principles involved remain practically intact. Most of the better engines, which are holding their own, work on what is known as the "Otto" cycle, which has been favourably known to engineers from the early days of gas engine construction.

In the "Ideal" gas and oil engines, which are manufactured under Southall's patents by Messrs. Hardy and Padmore, Limited, of Worcester Foundry, Worcester, and which have been steadily gaining in favour during the past year or two amongst those who require cheap and light running motors, the "Otto" cycle principle is again embodied with excellent results. These engines, which are practically noiseless in action, are provided with patent governors of an efficient type, which ensure uniformity of speed, and have a valve gear which admits of a high rate of speed being maintained. They are built on substantial lines, and the workmanship is unhesitatingly claimed to be as good as it can be, and no skilled attendance is required in using them. They are especially adapted for the driving of regular-running machinery, amongst which ventilating propellers, linotype machines, printing presses, and dynamos may be particularised. They seem to us to be especially suitable for the requirements of printers and manufacturing stationers in a small or moderately-sized way of business. They have successfully passed through their probationary stage, and are now, we understand, in work in France, Holland, Italy, Spain, Portugal, and Australia, besides being extensively used throughout the United Kingdom. Our illustration, Fig. 4, represents an "Ideal" gas engine, and indicates its general appearance.

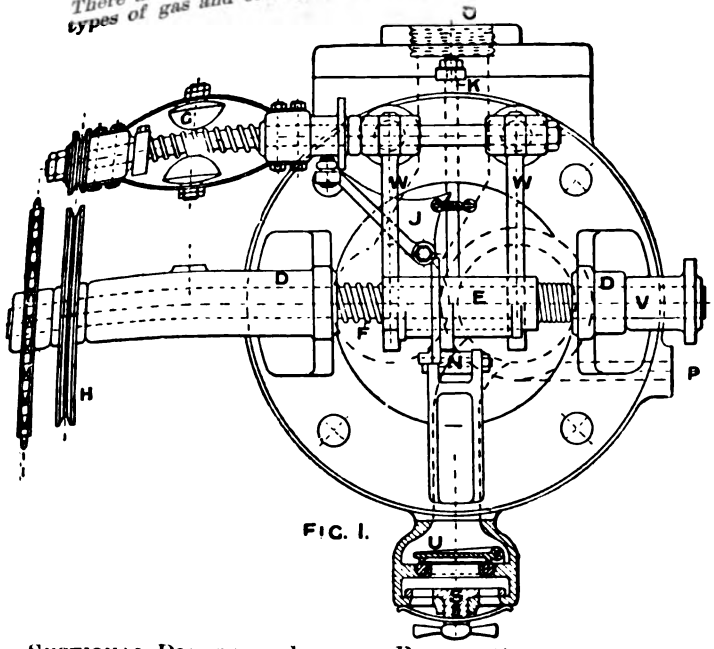

FIG. 1.

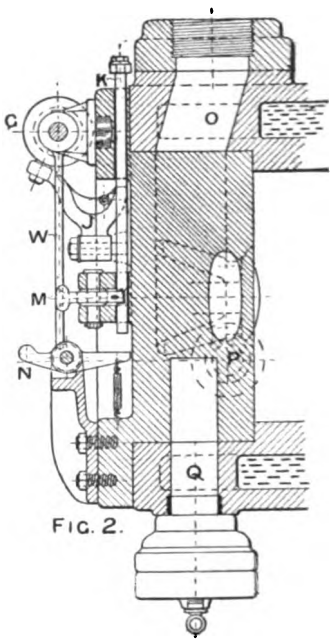

FIG. 2.

SECTIONAL DIAGRAMS SHEWING PATENT CONSTRUCTION OF THE "IDEAL" GAS ENGINE.

Coming now to the details of the patent construction of the gas motor, reference should be made to the diagrams, Figs. 1, 2, and 3, the first being a back view of the cylinder, the second a vertical sectional view of the same, and the third a sectional plan, the only modification that should be pointed out being that the patterns in the latest types have been altered so as to transpose the position of the exhaust outlet O and the air inlet Q. The working of the "Otto" cycle

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in this engine is, of course, completed in the course of two revolutions of the fly-wheel. The action may be thus described: During the charging out-stroke, the shaft C, driven by means of the chain gearing D^1 from the crank shaft at half its speed, causes the cam E^1 to lift the valve A, thus admitting the necessary air through a regulating valve S and passage Q, and gas through P, into the cylinder. On the next instroke commencing the valve A closes and compression takes place

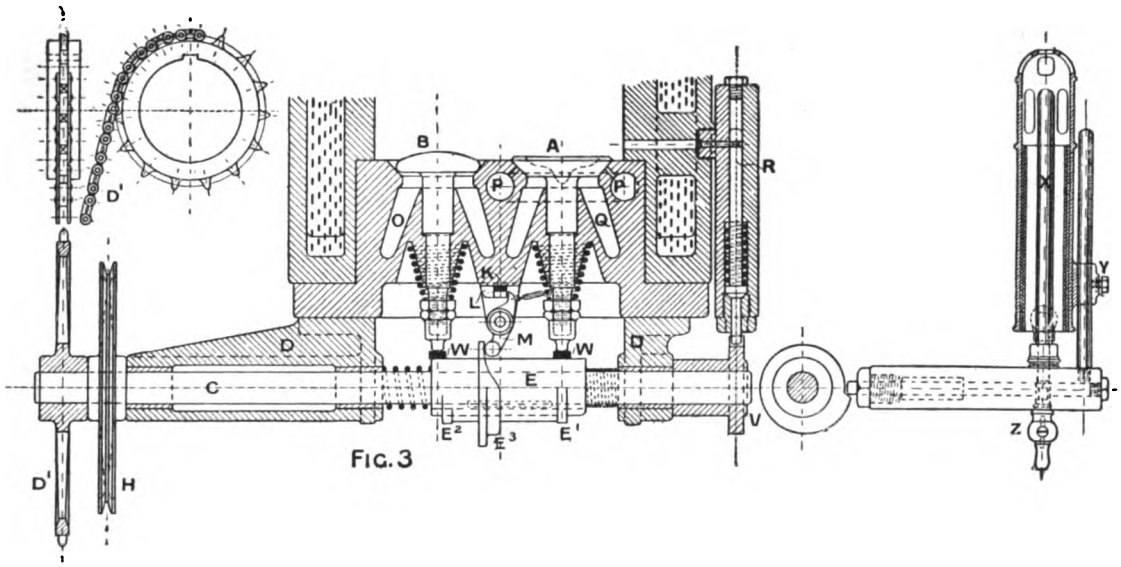

FIG. 3

SECTIONAL DIAGRAM SHEWING PATENT CONSTRUCTION OF THE "IDEAL" GAS ENGINE.

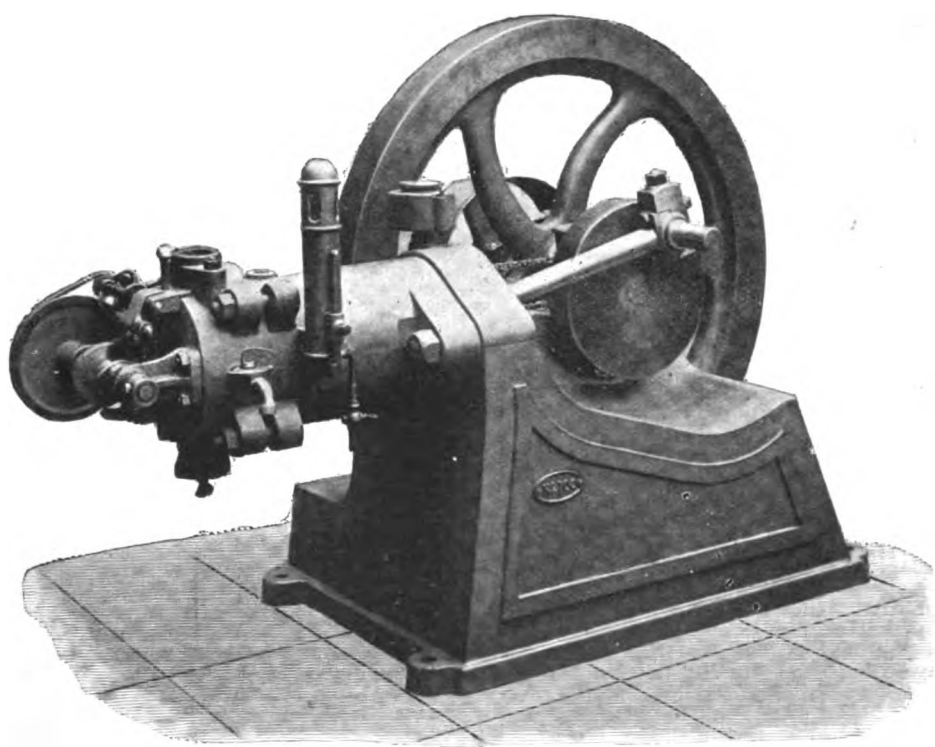

FIG. 4.—GENERAL VIEW OF AN "IDEAL" GAS ENGINE.

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ignition being performed at or near the end of the stroke by a tube X highly heated by a Bunsen burner, controlled by a tap Z. The ignition takes place a little before the crank pin has reached its inner dead centre, but in engines having a cylinder bore not exceeding five or six inches in diameter, the ignition timing valve R is not used, the moment of ignition being regulated by fixing the casing (carrying the Bunsen burner) by means of the set screw Y, higher or lower until the best point is ascertained. As soon as ignition has taken place the piston performs its power out-stroke, at the end of which the cam E^2 opens the valve B, allowing the instroke of the piston to drive out the products of combustion to the atmosphere by way of the exhaust port O.

The governor used on these engines is worthy of some notice. By its means the speed of the motor can be varied by regulating the degree of compression on the spring on the spindle G, the action being as follows: When the engine exceeds its set speed the governor draws the pivoted pawl J outwards, allowing the bar K to drop, preventing the short lever M from rocking, and causing the whole cam E to be moved laterally along C, thus compressing the spring F. The cam E^1 at this stage misses the stem of the valve A, preventing any gas and air from entering thereby, while a new outline of the cam E^2, coming opposite the stem of the valve B, keeps that valve open during the next two strokes of the piston, allowing it to simply draw in air and expel it again by way of O. At each revolution the cam E^3 depresses the outer end of the lever N, lifting up the bar K into its original position, when, if the speed of the engine has been sufficiently reduced, the pawl J again locks the bar K and holds it up, allowing the lever M to resume its rocking action, the cam E by the aid of the spring F moving laterally along C gently to its original position, again to perform its normal operations. By reason of the strips of metal W, which are now fitted with anti-friction rollers, the cam is effectively prevented from exerting any dragging action on the valve spindles.

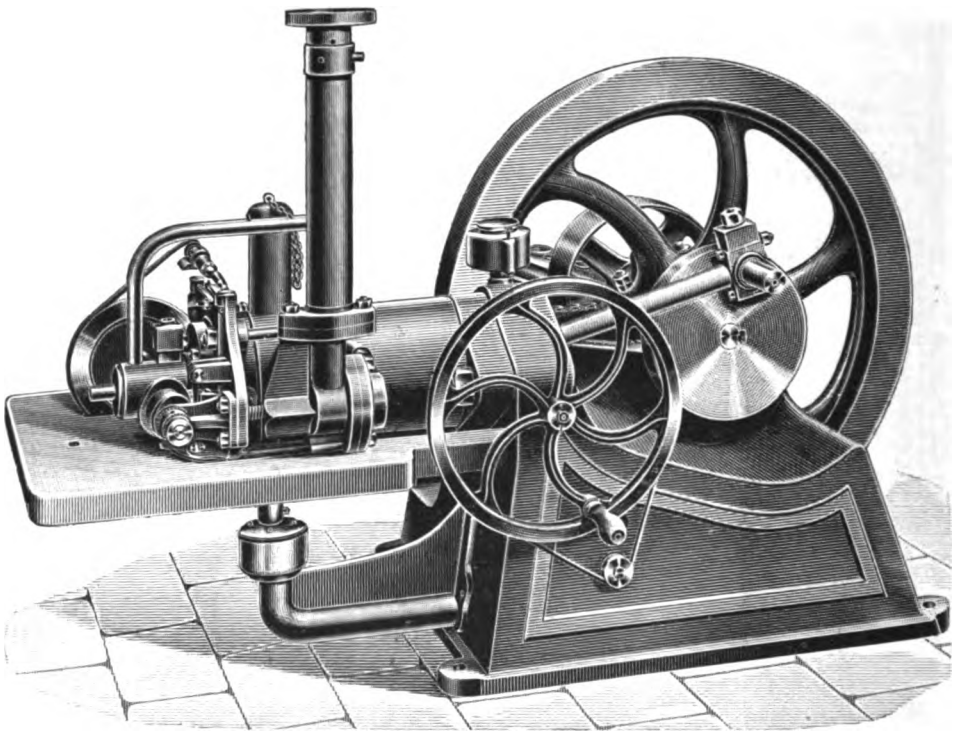

FIG. 5.—GENERAL VIEW OF AN "IDEAL" OIL ENGINE.

The design and construction of the "Ideal" oil engine, illustrated in Fig. 5, very closely follow the lines of the gas motor, although there are necessarily variations in matters of detail. They are started and worked with ordinary heavy petroleum lamp oil, such as "Royal Daylight," and are claimed to be perfectly safe and to be capable of starting in six minutes. No oil or air pumps are used, and as the working parts are reduced in number to a minimum and are of substantial dimensions, the durability of the engine is one of its strong points, a wick serving

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for the supply of the oil in a wonderfully simple and efficient manner. The sectional illustrations, Figs. 6 and 7, further indicate the structural arrangements of the engine, and by way of explanation it will be sufficient if we state, briefly, that the supply valve controls the simultaneous admission of air and oil, gas or fine spray from a number of rather long holes which connect the wick with the seat of the valve. The exhaust port is controlled by a valve which, with the supply valve, is operated by cams on a long sleeve carried on and driven by a shaft which revolves in suitable bearings at half the speed of the crank shaft. Cam arrangements are provided, by means of which the governing of the engine is accomplished by entirely cutting off the charges when the engine exceeds the speed at which it is set to run. When it does so, the governor draws over a bar against the energy of a light spring allowing a spring-urged bar working in guides to descend into the path of the inner end of a sheet lever, which is so pivoted that during the nominal working of the engine it rocks freely backwards and forwards, in the same manner as already described with reference to the gas engine.

A feature of the engine is the ignition of the charges by a piece of metal isolated by non-conducting material, which, after the engine has run a few minutes, becomes heated to a higher temperature than the rest of the engine, thus allowing the vaporiser to remain at

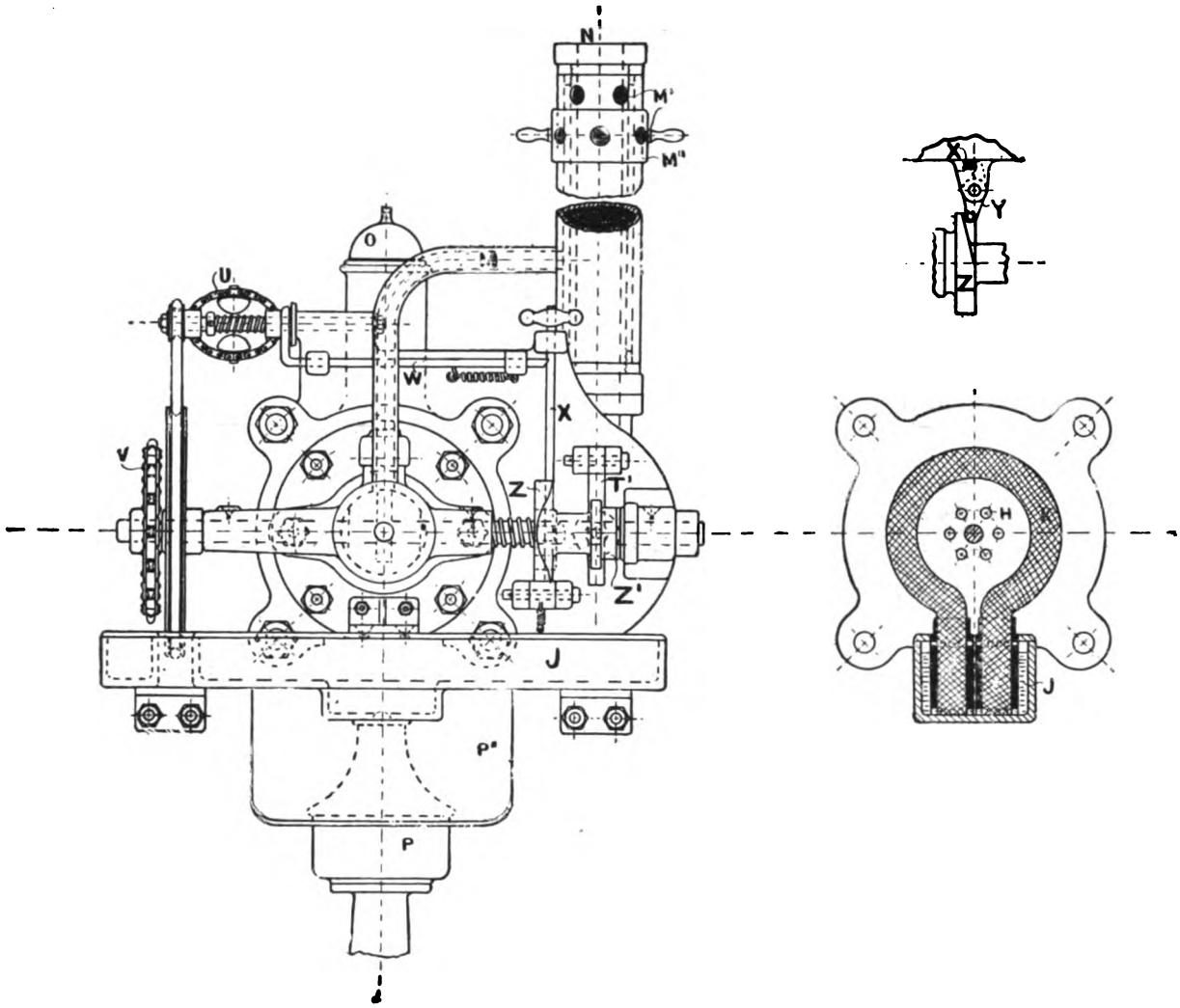

FIG. 6 AND 7.—ENGINE: SECTIONAL DIAGRAMS SHEWING PATENT CONSTRUCTION OF THE "IDEAL" OIL ENGINE.

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a lower temperature than would be practicable if its heat had to perform the ignitions. The point of greatest importance, however, is the patent wick feed, which enables an absolutely regular feed to be given, not of oil, but of oil gas, or very fine oil spray. The oil engine, as also the gas engine, are now fitted with an improved patent adjustable chain gear which renders such gear superior even to the much used lay shaft.

Regarding the sizes of the "Ideal" gas engine, which, as we have already said, are adapted for moderate powers, the following figures form a comparative guide, but larger sizes are in progress, and will be exhibited at the Royal Agricultural Show at Birmingham.

PARTICULARS OF "IDEAL" GAS ENGINES.

Brake Power.	Gas used per hour.	Weight.	Size over all in inches.			Dia. of fly wheel.	Revs. per min.
		cwt. qrs. lbs.	Length.	Width	Height.		
1-man	½d. to ¾d.	1 2 14	31	18	17	15 ins.	450
2-man nearly	¾d.	2 1 21	36	19	22	19 ,,	400
½-horse	1d.	2 3 0	38	20	22	21 ,,	375
1-horse	1¼d.	6 0 0	50	24	32	30 ,,	250
1½-horse	1¾d.	6 2 0	56	24	32	30 ,,	300

PARTICULARS OF "IDEAL" OIL ENGINES.

Brake Power.	Weight.			Sizes over all in inches.			Diameter of Fly-wheel.	Revolutions per minute.
	Cwts.	Qrs.	Lbs.	Length.	Width.	Height.	Inches.	
½-horse	7	0	0	56	30	32	30	350-400
¾-horse	7	2	0	58	30	32	30	350-400
1-horse	7	3	0	58	30	32	30	350-400

The advantages in convenience and economy of working which the use of such engines as those of the "Ideal" series presents to small printers and manufacturing stationers are unquestionable. They can be put to work at once without the trouble and expense of getting steam up in a boiler for perhaps only a short, though imperative run. They can be stopped instantly, and working expenses cease at the same time. They may also be used in combination with dynamos with great advantage, and individual printing presses or other machines be driven individually therefrom. For auxiliary driving purposes they are equally serviceable; and the best indication that the utility of such motors is now being adequately appreciated is the demand that there is for them, and the increasing competition amongst their makers. The testimonials of users of the "Ideal" engines, at all events, are flattering alike to their inventor and their manufacturers.

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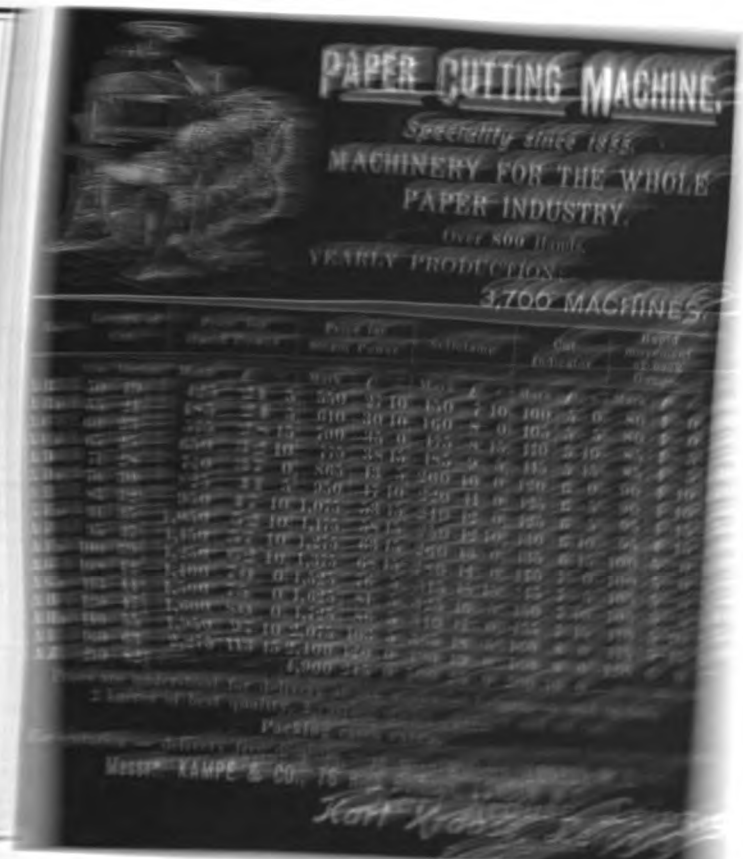

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The World's Paper Trade Review

A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 18. LONDON: MAY 6, 1898. EVERY FRIDAY. PRICE SIXPENCE.

Paper Mill Effluent.

THE PEEBLES' CASE.

Important Decision by the House of Lords.

PASMORE AND OTHERS *v.* OSWALDTWISTLE URBAN DISTRICT COUNCIL.

From a papermaker's point of view, the decision in the appeal of Pasmore and Others *v.* the Oswaldtwistle District Council must be regarded as unfortunate, as manufacturers will still have to face the many difficulties attending the treatment and disposal of factory effluents. Judgment was given on Thursday, last week, by the House of Lords. The action out of which the appeal arose was for a mandamus commanding the present respondents to cause to be made such sewers as may be necessary for effectually draining their district for the purposes of the Public Health Act, 1875, and to give facilities to enable the plaintiffs to carry the liquid proceeding from the White Ash Paper Mill into the sewers under their control. The action was originally brought by Mr. Philip Cadell Peebles, who owned, and occupied, and carried on the business of papermaking at the Whiteash Paper Mill. In the course of the proceedings the said Philip Cadell Peebles died, but the action was continued by his executors under an order of revivor, dated April 24th, 1896. Before the action was instituted Mr. Peebles requested the defendants, and the defendants refused, to provide sewers for the reception of the liquids from the paper mill. The claim was based on the Public Health Act, 1875, sections 15 and 21, which impose upon the local authority the duty of providing a proper sewage system. The respondents, however, contended that such obligation was not one towards the appellants or any individual occupier, but for the benefit and purposes of the whole district. They also relied upon section 299 of the Act, which prescribes as the remedy in such a case complaint to the Local Government Board. That section enacts that when such complaint is made the Local Government Board, if satisfied after due inquiry that the local authority had been guilty of default, shall make an order limiting a time for the performance of the duty so neglected. That remedy, the respondents urged, was the only and exclusive one in case of any default by the respondents. The case was heard by Mr. Justice Charles, on November 11th, 1896, and by arrangement the question of law was argued before any evidence was gone into. The learned judge granted the mandamus, but on March 18th, 1897, the Court of Appeal, consisting of the Master of the Rolls (Lord Esher), Lord Justice Lopes, and Lord Justice Chitty, reversed that decision, and dismissed the action with costs.

Before the House of Lords, Mr. Cozens-Hardy, Q.C., and Mr. C. A. Russell, Q.C., instructed by Messrs. Soames and Son, solicitors, London, appealed for the appellants, and Mr. Joseph Walton, Q.C., M.P., and Mr. Danckwerts, instructed by Mr. C. Costeker, Darwen, appeared for the respondents.

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[illegible] that the [illegible] said there [illegible] Act which [illegible] The [illegible] impossible [illegible] The principle [illegible] provided of a kind [illegible] law, and the [illegible] expressed in the [illegible] The principle was [illegible] obligation [illegible] manner [illegible] The [illegible] and [illegible] any [illegible] combining [illegible] which was [illegible] which [illegible]

point on which the [illegible] Appeal had decided the case, [illegible] there was a complete remedy [illegible] the Act of 1875, [illegible] section [illegible] and therefore no mandamus [illegible] was asked for by the appellants [illegible] and the appeal must be dismissed with costs.

Lord Macnaghten, Lord Morris, and Lord James concurred.

"THE Recent History of Papermaking."

The INVENTION of the "DANDY ROLL."

[illegible] the World's Paper Trade Review

[illegible] in your last issue, under the [illegible] "The Recent History of Papermaking," [illegible] made to my lecture [illegible] Arts, and that it [illegible] that I was wrong [illegible] the dandy roll was invented [illegible] partner in the firm of [illegible]

[illegible] this opportunity of apologi[illegible] Marshall and Co. for [illegible] done them in not associating [illegible] the late John Marshall with the [illegible] dandy roll. My mistake [illegible] that in the report of the [illegible] Exhibition of 1851, Wilks [illegible] a patentee of the dandy roll [illegible] made of Marshall.

[illegible] one or two instances that [illegible] report is somewhat [illegible] I am afraid that the rovers in [illegible] further back in the history [illegible] than the published patents [illegible] in giving to the patentee [illegible] properly belonged to the inventor [illegible] I am afraid that [illegible] their example [illegible] very bad and unjust one. I [illegible]

Yours faithfully,

CLAYTON BEALE.

[illegible] Paper Company [illegible] The statutory meeting of [illegible] was recently held at the [illegible] Mr. [illegible] Pinkerton [illegible] of the Board of Directors [illegible] there were also present:— [illegible] J.P., and Mr. [illegible] the other directors [illegible] Secretary, [illegible] The Chairman [illegible]

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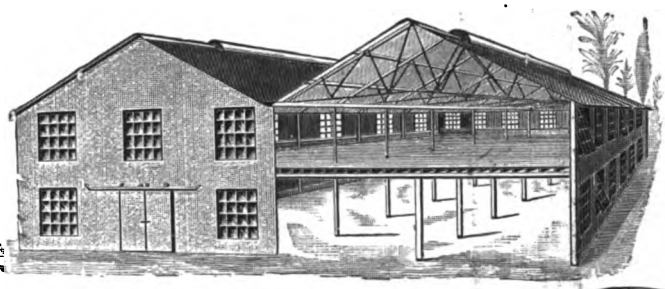
IRON ROOFS AND BUILDINGS,



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☞ Refer to Article on Acetylene Gas in No. 12 (Vol. XXIX), of this Journal. ☜

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ASBESTOS:

ITS MINING, MANUFACTURE, AND INDUSTRIAL APPLICATIONS.

There are few natural substances capable of a wide range of industrial application with which greater advances have been made during the last quarter of a century than the strange, fibrous mineral, known as asbestos. Though familiar even amongst the ancients, it was not until a period within the memory of the present generation that asbestos attained to any appreciable degree of commercial importance. Even in these days much ignorance prevails regarding its valuable utilitarian characteristics, and we shall probably be doing some service to many of our readers by reviewing the methods of its mining and manufacture, as practised by one of the most important concerns engaged in dealing with it on a commercial scale. Moreover, in its manufactured forms, asbestos appeals strongly to the interests of paper mill and paper-pulp mill owners, and it also forms the raw material from which a large production of millboard and paper takes place.

MR. J. ALFRED FISHER.
General Manager and Secretary of the United Asbestos Co., Limited.

There is no particular advantage to be gained by enlarging upon the ancient history of asbestos, even if the data available

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were wholly reliable, which is open to question. It is sufficient to reflect that evidences exist which show that the mineral was known in tolerably remote times, and that in a certain fashion advantage of its textile character and fire-resisting and other properties was taken in various ways. The modern history of asbestos may be said to have commenced with the dawn of the present century. About then, at all events, a couple of enterprising Italians endeavoured to improve upon the efforts of the ancient Romans in the direction of producing a cloth from the fibrous mineral. Their experiments, which appear to have gained the approbation of Napoleon I., were lost sight of amidst the turmoil and political disquietude which was the normal condition of Europe in the early part of the century. To come nearer home we find that the first English patent for manufactured asbestos was taken out in 1834, and was for linings for safes. In 1857 a patent was taken out in the United States by a Mr. Richard Lloyd for an asbestos packing, and asbestos was used in that country about 1863 in the manufacture of roofing felt and cement.

So far as Great Britain is concerned, however, the establishment of the asbestos industry would seem to have come about as the result of the efforts of some enterprising Scotsmen, and in this connection the names of Mr. H. R. Robson, and the late Mr. Walter McLellan, of Glasgow, should be mentioned. Having satisfied themselves as to the commercial value of asbestos, these gentlemen established the Patent Asbestos Manufacturing Co., Ltd., in Glasgow, in 1871. There also came into existence the Italo-English Pure Asbestos Co., in London, and the Asbestos business of Messrs. Furse Brothers and Co., of Rome. In 1880 these concerns became amalgamated under the title of the United Asbestos Co., Ltd., with the late Sir James Allport, formerly General Manager of the Midland Railway Co., as Chairman. The primary objects in view were the reduction of the prices of asbestos goods, and the placing of a better quality of articles in the market—both of which objects may be said to have been satisfactorily accomplished. The combination of enterprises under the one administration, moreover, lent a vast impetus to the development of the trade, which now represents an interest of very considerable commercial importance. The United Asbestos Co., Ltd., whose headquarters are at Dock House, Billiter-street, London, E.C., has depôts at Manchester, Liverpool, St. Helen's, Newcastle-on-Tyne, Hull, Cardiff, Bristol, and Glasgow. The works are at Harefield, near London, and asbestos mines are owned and worked by the company at Valtellina and Val d'Aosta, in Italy, and at Black Lake in Canada. The present Chairman of the company is Mr. Edward Gallatly, the well-known shipowner, and the General Manager and Secretary is Mr. J. Alfred Fisher, who has had almost a life-long experience of the asbestos trade, and whose portrait, as that of a leading authority on asbestos, we give.

THE WORKS OF THE UNITED ASBESTOS CO., LIMITED, AT HAREFIELD, NEAR LONDON.

At this stage it will be interesting if we glance at the principal sources of asbestos. Consisting chiefly of silicate of magnesia, the mineral has been found in many parts of the world. Indeed deposits of it have been discovered in most countries which come under the notice of the prospector for minerals. Of all the kinds of asbestos which have been subjected to experiment none have so far proved themselves to be of serious commercial value except those which are mined in Italy and Canada, which are, indeed, the main sources of supply for the manufacturing operations carried on in this country. The Italian and Canadian products, however, differ considerably in character and quality, the former being much the more valuable. A careful comparison of representative

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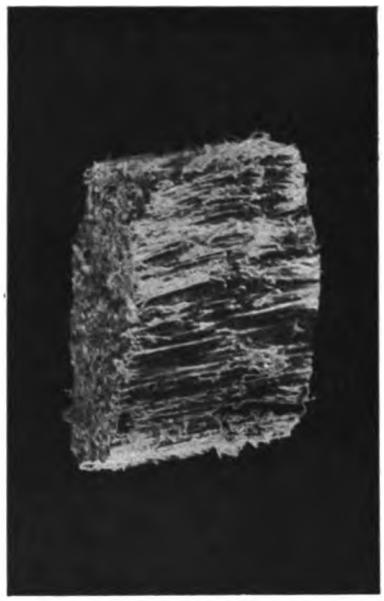
samples of both places indicate the superiority of the Italian. The Canadian asbestos as it comes from the mine ordinarily consists of small broken portions of mineral substance largely intermixed with short white fibres of asbestos. The Italian product, on the other hand, is usually free from miscellaneous mineral substances, being composed mainly of long, strong, fleecy and light grey fibres.



CANADIAN ASBESTOS IN THE NATURAL STATE.

ITALIAN ASBESTOS IN THE NATURAL STATE.

MINING ASBESTOS IN CANADA.

MINING ASBESTOS IN ITALY.

We have examined a sample of continuous asbestos fibre 15 feet long, and have seen other very remarkable specimens. One of much

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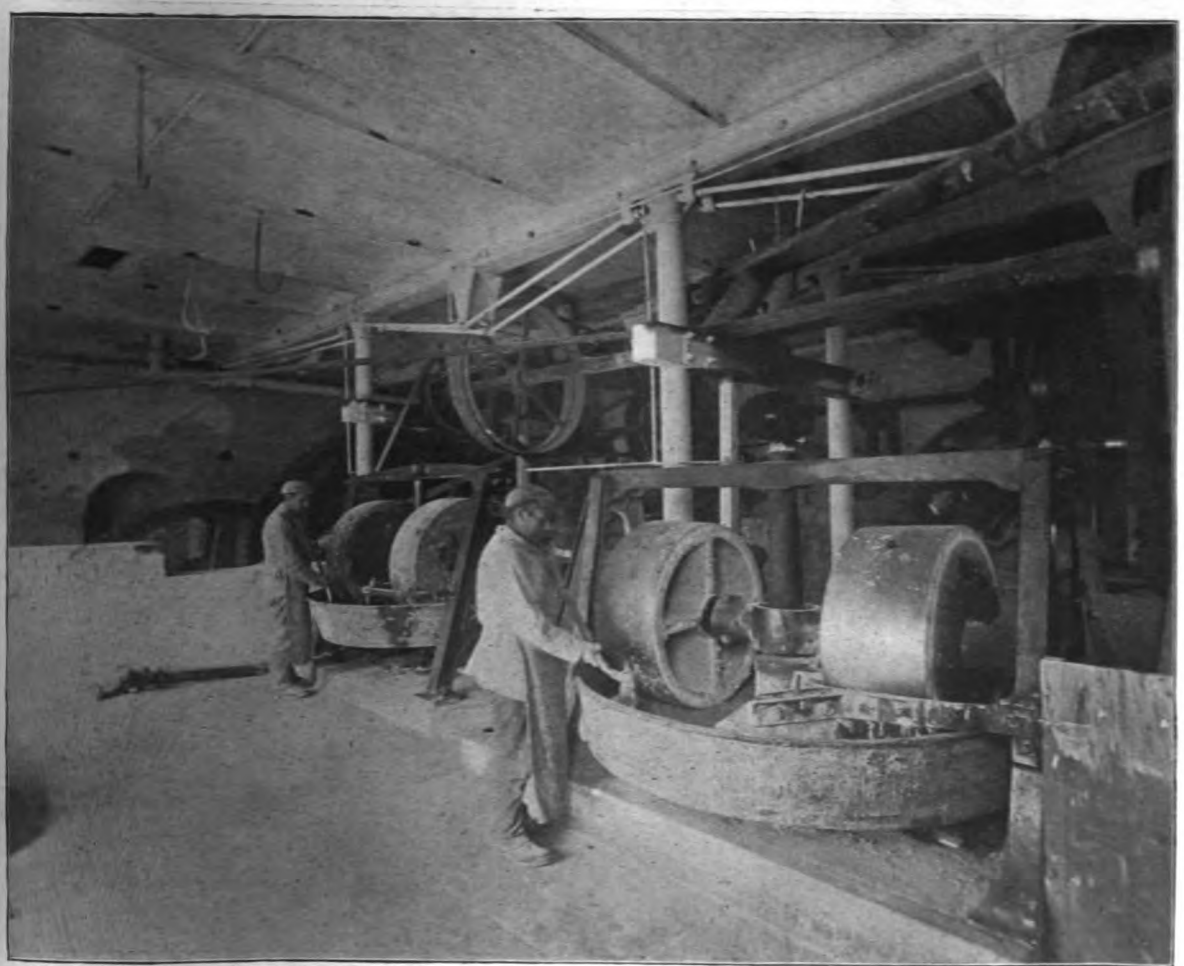
beauty is to be seen in the permanent exhibit of the United Asbestos Co., Ltd., at the Crystal Palace, Sydenham. The finest classes of asbestos goods, and those in which the possession of a long fibre is a *desideratum*, are manufactured from the Italian mineral, and millboard, packings, cement and other goods chiefly from the Canadian.

Asbestos mining in Italy was not a matter of serious consideration until the year 1866, when, it appears, an Italian gentleman, Signor Albonico, a highly cultured Florentine cleric, Canon Del Carona, and a Roman noble, the Marquis di Baviera, interested themselves in the exploitation of the rich deposits of the mineral, and produced some asbestos cloth and paper. Their efforts were seriously handicapped by the outbreak of the Franco-German War in 1870. Concessions had been secured, however, and these, as time went on, passed into the hands of the Italo-English Pure Asbestos Co., already mentioned, and thence, of course, into those of the United Asbestos Co., Ltd.; and it is interesting to note that Signor Albonico is the present manager of the company's mines in Italy. Actual mining operations, which give employment to a large proportion of the population in the immediate districts in which the deposits are found, are conducted by means of shafts and galleries, dynamite being used for blasting purposes.

Asbestos mining in Canada did not commence until 1878, although specimens of the mineral from Eastern Quebec were shown in London at the Exhibition of 1862. It was not until the publication of the prospectus of the United Asbestos Co., Ltd., in 1880, that asbestos mining in the Dominion received any especial impetus, and since then increasingly large quantities of the mineral have been mined and imported into this country. The work of obtaining the material might be described as quarrying rather



THE PREPARATION AND CRUSHING OF ASBESTOS.

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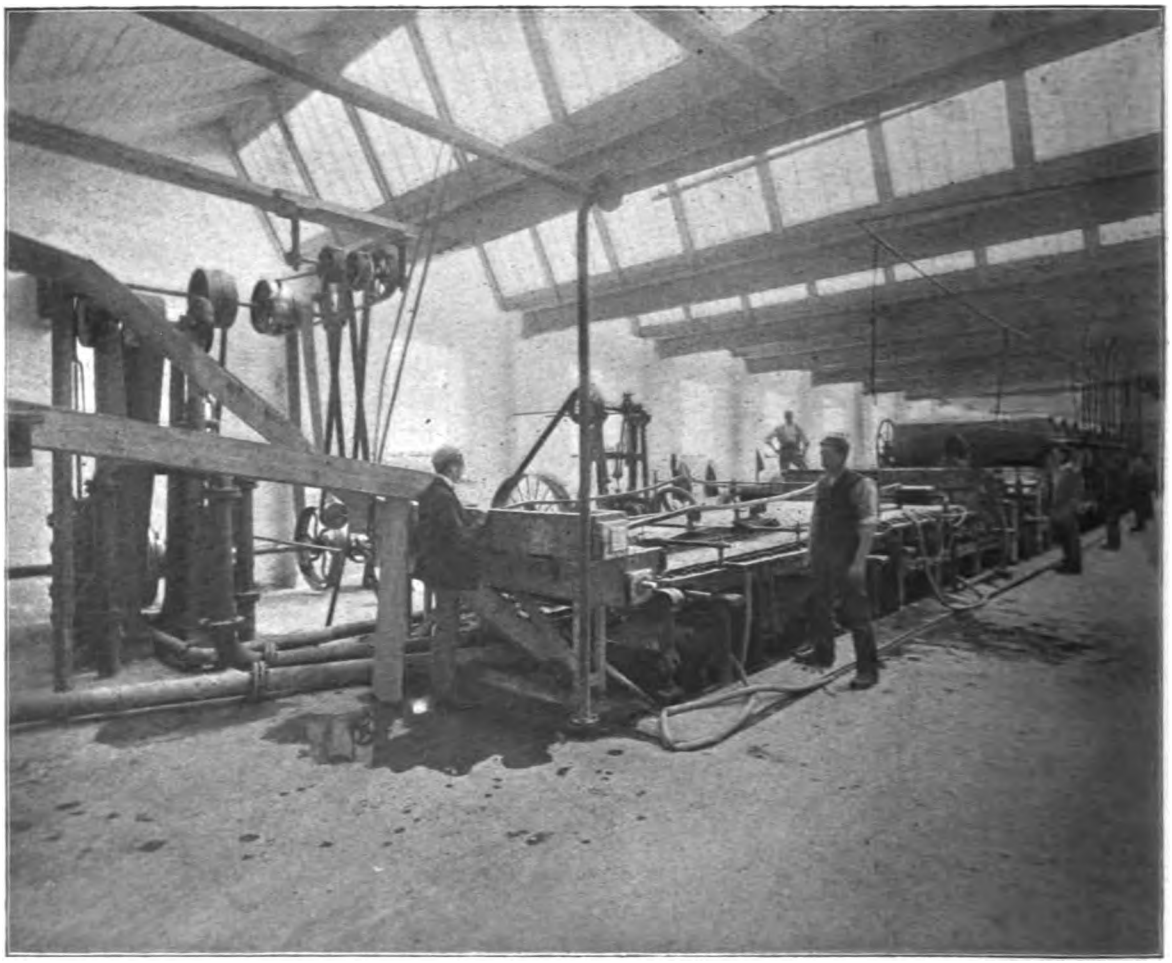
than mining. The asbestos-bearing rock is first displaced by blasting. The pieces are then broken up, the barren rock "dumped," and the asbestos removed from adhering rock by "cobbing."

And now we come to the manufacture of asbestos goods as exemplified at the Harefield Works of the United Asbestos Co., Ltd. That is to say, we disclose as much as we may of what goes on there, for, especially in dealing with Italian asbestos, the use of special machinery is necessary, and one can appreciate the degree of reserve with which the courtesy of the company's management has to be varnished, when a technical journalist makes a call at Harefield. First of all one observes the treatment of the crude asbestos. The rock is crushed in a manner which serves to open it up sufficiently without injuring the fibre. The material is then operated upon by shaking machines, which remove the particles of rock and separate the long fibres from the short. The long fibres undergo a course of treatment in the carding and condensing rooms, which much resembles those which take place in the corresponding departments of a textile factory. The process is one which presents many difficulties which, however, special mechanical arrangements provided overcome. The slivers of untwisted thread as they come from the condensers lightly fold themselves in cans placed for their reception, and these slivers pass in due course to the spinning and doubling department, whence they emanate in due course twisted into yarn-like threads of various degrees of fineness. These are then conveyed to the weaving and braiding rooms, where they are woven into cloth, tapes and material for packings. The cloth is subsequently taken to the india-rubber department, where it is duly



THE MANUFACTURE OF ASBESTOS PAPER.

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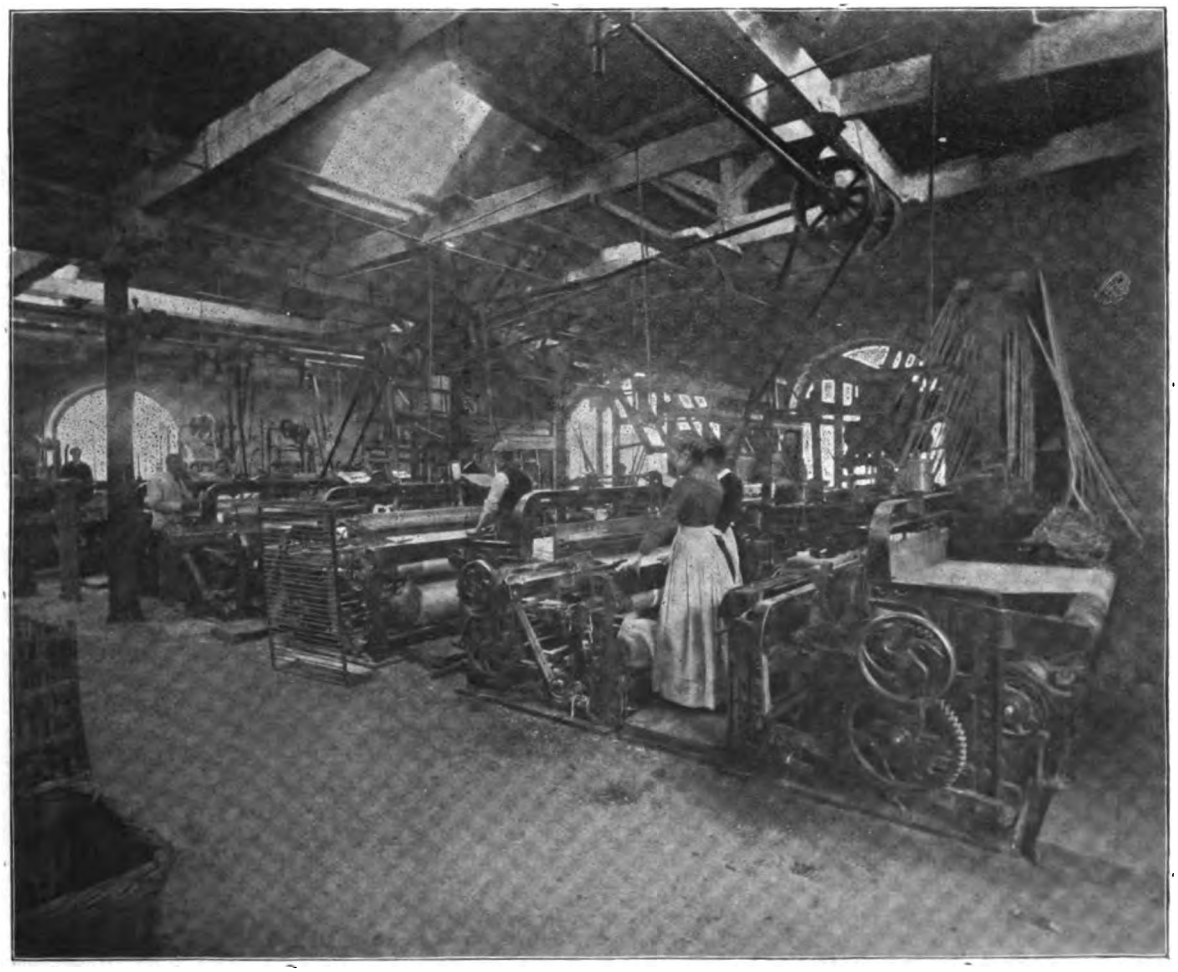
"proofed" with a solution of india-rubber, and becomes the company's well-known "Rubesto" or "Victor Metallic" sheeting, tape, joints, and block packings for glands.

Meanwhile the short fibres from the shaking machines, where we left them, have passed on to the millboard and boiler-covering departments. In the manufacture of millboard the asbestos fibre is run with water into the tanks of beating engines, each of which is provided with a rotating beater, which, while maintaining a thorough circulation, opens up and draws the fibre, and finally sends it forward to soak for a time until it again comes under the influence of the beater. At this stage the binding ingredients are added and thoroughly mixed with the fibre, after which the resulting pulp passes into the vat of the millboard or papermaking machine, where it is maintained in a state of agitation until it is drawn off. As in the case of ordinary millboard making, the water percolates through a fine wire gauze on a revolving cylinder, leaving the requisite thin layer of pulp on the cylinder. By means of an endless band this coating is transferred to a second cylinder, whereon it gradually accumulates until the desired thickness has been reached. This attained, it is cut across and removed in the form of square sheets, which are placed between sheets of zinc, which, under hydraulic pressure, remove the remaining moisture. After hanging in drying rooms the sheets are once more pressed, and finally trimmed ready for the warehouse. It is worthy of remark that chemical analysis indicates that the composition of the best millboards is practically identical in character and constitution with the fibre from which it is produced. The millboard is made from both



THE WEAVING OF ASBESTOS GOODS.

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Italian and Canadian asbestos, but the former produces much the best article. It is made in all thicknesses from $\frac{1}{32}$-inch to 1-inch, and in sheets measuring 40 inches by 40. Paper made from Italian asbestos is also made in rolls 36 inches wide for very fine joints, electrical and other purposes.

The boiler-covering department now calls for remark. Here the short fibres and powdery asbestos are worked up with other suitable ingredients into a non-conducting and indestructible composition for covering steam boilers and pipes. At the same time the covering can be readily removed and replaced. Other departments might call for notice *seriatim* did space and other circumstances permit; but it must suffice if we incidentally mention them in connection with the productions which emanate from them. Of these one of the chief is the "Victor" metallic cloth, which has a fine brass wire in the centre of each thread of asbestos, both warp and weft, which materially adds to the strength of the material, and represents a combination of the highest importance in the production of packings and jointings. So close can joints be made from this material that it is largely used in hydraulic work. The fire-resisting powers of this cloth was demonstrated in convincing fashion in the case of the fire which destroyed the auditorium of the Queen's Theatre at Manchester in 1890. On this occasion, although the fire raged fiercely for some hours, the stage and its contents were saved by reason of the asbestos curtain which was suspended at the proscenium opening.

THE SPINNING OF ASBESTOS YARN.

Elsewhere in the works are departments devoted to the manufacture of asbestos putty, for use in lieu of red-lead; asbestos cement, for joints and the protection of conductors in electric light installations;

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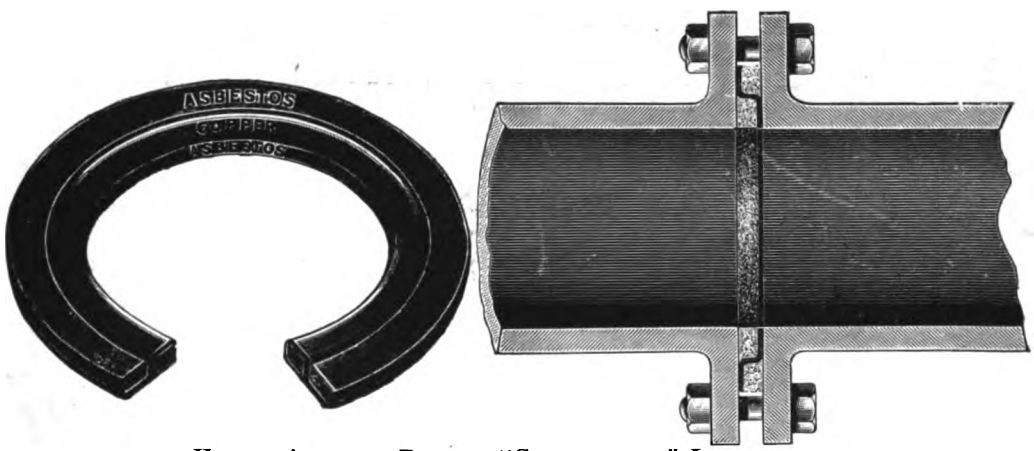
asbestos fibre and fuel for gas fires; asbestos building felt or sheathing for lining floors and partitions; boiler preservative, lubricating oils, and asbestos decorations. These last represent a wholly new departure in the application of asbestos, and have been invented and patented by the United Asbestos Co., Ltd. The decorations are manufactured in designs by eminent artists in high and low relief for friezes, dados, fillings, walls, ceilings, and the like. The incombustible nature of asbestos render these decorations of importance, on account of their fire-resisting qualities.

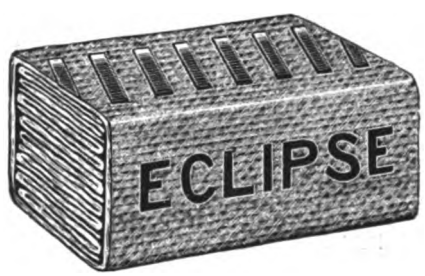
A cursury glance over one of the warehouses of the company serves to indicate the multiplicity of the applications of asbestos which inventive ingenuity has devised. In addition to the goods already enumerated, mention should be made of the "Gladiator" packings for high-pressure engines, which present a very perfect combination of asbestos and metal; the "Eclipse" metallic packings, another effective combination, especially adapted for piston packing; multiple core packings, made up from asbestos cloth, wire-woven cloth and india-rubber with multiple cores; round or square plaited asbestos yarn packing; a combination packing made of asbestos yarn and soapstone; rope, twine, tape, tubing, aprons and gloves, which are alike acid and fire-resisting; asbestos cloth which is rendered waterproof by a special process, and which, being also fire-proof, is especially useful for tents and other purposes in close proximity to heat or naked lights; asbestos fire-proof paint, which is now widely used; and yet the list might be further extended.

The utilitarian character of asbestos, it will be understood from what we have said, is of great industrial importance, and the usefulness of various of its applications to the paper and paper-pulp maker is obvious. The metallic and other asbestos packings and jointing materials manufactured by the United Asbestos Co., Ltd., which are now adopted by the Lords of the Admiralty for use throughout the Navy, will especially commend themselves, as will also the boiler and pipe-covering compositions, and the fire-proof paint, which last may be substituted for ordinary paint in mills, with the advantage that by its use the risk of fire is materially reduced. In the selection of goods made of asbestos, discrimination must be shown, for much that is of an inferior character has found a place in the market. The superiority of the manufactures of the United Asbestos Co., Ltd., however, is now fully recognised, and the company are contractors to the Admiralty, War Office, the Office of Works, the Home Office, the India Office, the Colonial Office, Trinity House, and the principal English, Indian, Colonial, and foreign railways.



United Asbestos Patent "Salamander" Joints.

Multiple Core Packing.



"Eclipse" Metallic Packing.

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LYONS	Rue Montesquien 96.
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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

MANUFACTURERS of sulphite pulp in Scandinavia report a firm market. They now anticipate a demand from users in the United States.

THE week's imports of paper stock at New York, according to the latest list to hand, included 35 tons of chemical fibre from Copenhagen, and 100 tons from Antwerp.

MECHANICAL wood pulp mills in Norway and Sweden report a steady demand, and that prices have an upward tendency. British buyers, however, are slow to do business at higher quotations.

AN official return has just been issued, dealing with the trade of Stockholm and the eastern coast of Sweden for the year 1897. The exports from Stockholm included 21,714 cwts. of wood pulp, the quantity for the previous year being 8,005 cwts.

FROM Sweden the exports of chemical wood pulp in 1897 amounted to 1,502,102 cwts. of dry, and 158,802 cwts. of moist. The figures for 1896 were 1,461,309 cwts. of dry, and 151,810 cwts. of wet.

WOOD PULP described as "machine pressed" was exported from Sweden in 1897 to the extent of 766,840 cwts. of dry, and 1,035,338 cwts. of wet. The figures for the previous year were 688,123 cwts. of dry, and 1,239,484 cwts. of wet.

DURING April the arrivals of wood pulp at London included the following:—Stockholm (s): 1,500 bales from Stettin. Bjorn (s): 160 bales from Christiania. Virgo (s): 460 bales from Hambro. Grebe (s): 50 bales from Rotterdam. Batavier III. (s): 10 bales from Rotterdam. Merlin (s): 2,592 bales from Antwerp. Iris (s): 782 bales from Hambro. Thule (s): 1,612 bales from Gothenberg. Oberburgermeister Haken (s): 457 bales from Stettin. Benbow (s): 3 bales from Rotterdam. Azalea (s): 3,232 bales from Antwerp. Fitzclarence (s): 277 bales from Rotterdam. Leo (s): 180 bales from Norkoping. Corennie (s): 3,593 bales from Skein. Prins Hendrik (s): 70 bales from Flushing. Viking (s): 2,925 bales from Skein. Swift (s): 300 bales from Ostend. Skane (s): 324 bales from Gothenburg. Kelso (s): 222 bales from Christiania; 900 bales and 157 cases from Drammen; and 406 from Moss. Heron (s): 316 bales from Hambro. Balder (s): 1,400 bales from Fredrikshald; and 2,448 bales from Drammen. Bele (s): 309 bales from Gothenburg. Plover (s): 3,090 rolls and 1,067 bales from Antwerp. Nautil S. (s): 23 bales from Amsterdam. Nanna (s): 4,158 bales from Arendal. Minerva (s): 406 bales from Hambro. Gannet (s): 880 bales from Hambro. Roland (s): 94 bales from Hambro. Ystroom (s): 76 bales cellulose from Amsterdam. Granton (s): 3,266 rolls from Antwerp. Oxford (s): 1,000 bales from Yhonigsberg. Sea Belle (s): 240 bales from Ghent. Moringen (s): 2,950 bales of wet and 250 bales of dry wood pulp from Skein. Benbow (s): 1,085 bales from Antwerp. Nevada (s): 822 tons from Helgenas. Thule (s): 1,020 bales from Gothenburg. Castor (s): 507 bales from Hango. Spindrift (s): 296 barrels of sulphate and 20 bales of wood fibre from Ghent. Batavier II. (s): 20 bales from Rotterdam. Keimdal (s): 1,600 bales from Christiania. Galatea (s): 40 bales from Antwerp. Thorsten (s): 2,421 bales and 144 rolls from Gothenburg. Sea Gull (s): 106 barrels of sulphate from Ghent. Ragni (s): 840 bales from Fredrikstadt. Nordnaes (s): 8,665 bales from Drammen.

AMERICAN and Canadian arrivals of wood pulp were landed at London during April as under:—Iona (s): 2,920 bales from Portland, Me. Montana (s): 48 bales pine fibre from Baltimore. Damara (s): 2,490 bales from Halifax. Mantinea (s): 1,246 bales from St. John. St. John City (s): 300 bales from Halifax, and 1,065 bales wet pulp from St. John. Lambert Point (s): 3,815 bales from Portland, Me. Tremont (s): 18 cases from Philadelphia. Platea: 3,444 bales from St. John. Cheronea (s): 933 bales from St. John.

AT Manchester, during April, the following lots of wood pulp were received:—Shando (s): 866 bales from Gothenburg, and 320 bales from Christiania. Odd (s): 4,025 bales from Gothenburg. Ptarmigan (s): 20 bales from Ghent. Erato (s): 1,646 bales from Gothenburg. Fido (s): 1,450 bales from Christiania, 1,000 bales from Fredrikshald, 600 bales from Skein, and 300 bales from Risoi. Lestris (s): 5 bales from Rotterdam. Sarp (s): 8,165 bales from Sarpsborg.

THE imports of wood pulp at Preston during April, included:—Lydia Millington (s): 2,400 bales from Arendal, and 2,350 bales from Drammen. Start (s): 2,995 bales from Drammen. Scott (s): 620 bales from Skein, and 3,321 bales from Arendal. Jens Meinich (s): 3,572 bales from Gothenburg.

AT Liverpool the April imports of wood pulp from the Baltic included:—Shieldrake (s): 17 bales from Amsterdam. Dotterel (s): 149 bales from Rotterdam. Tadorna (s): 80 bales from Ghent. Avocet (s): 162 bales from Rotterdam. Hermod (s): 199 bales from Gothenburg. Shieldrake (s): 19 bales from Rotterdam. Vauland (s): 199 bales from Gothenburg. Minho (s): 1,000 bales, chemical pulp from Oporto. Fido (s): 12 cases from Christiania.

AMERICAN and Canadian wood pulp was received at Liverpool during April as under:—Laurenlian (s): 572 bundles from Portland.

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Scotsman (s): 1,091 bundles and 260 rolls from Portland. Lake Huron (s): 320 bundles from St. John. Norseman (s): 1,801 rolls from Boston. Cambroman (s): 1,171 rolls from Boston.

THE imports of wood pulp at Hull during April included: Swift (s): 9 bales from Rotterdam. Juno (s): 420 bales from Drontheim, and 61 bales from Bergen. Astrea (s): 201 bales from Hango. Argyle (s): 100 bales from Konigsberg. Tasso (s): 1,340 bales from Drontheim. Montbello (s): 430 bales from Christiania, and 240 bales from Christiansand. Romeo (s): 856 bales from Gothenburg. Urania (s): 262 bales from Hango. Capella (s): 134 bales from Hango. Remeo (s): 256 bales from Gothenburg. Tasso (s): 1,140 bales from Drontheim, and 20 bales from Bergen. Montebello (s): 969 bales from Christiania. Urania (s): 242 bales from Hango.

THE imports of wood pulp at Grangemouth during April, included the following:—Norway (ss): 500 bales from Christiansand. Corsica (ss): 30 bales from Hamburg. Scotland (ss): 272 bales chemical, and 340 bales mechanical pulp from Christiania. Sirius (s): 4,800 bales mechanical pulp from Holmestrand. Cumberland (ss): 306 bales from Hamburg. Norway (ss): 350 bales mechanical, and 150 bales chemical pulp from Christiania. Mascotte (ss): 50 bales from Rotterdam.

WOOD PULP was received at Granton last month as follows:—Amyalane (ss): 3,300 bales from Carlshamn. Carl XV. (ss): 556 bales from Gothenburg. Tronda (ss): 279 bales from Bergen.

AT Leith, the following cargoes of wood pulp were unloaded during April:—Breslau (ss): 325 bales from Hamburg, Sir Water (ss): 300 bales from Oporto. Carl XV. (ss): 392 bales chemical pulp from Gothenburg. Quentin (ss): 135 bales from Rotterdam. Prague (s): 296 bales from Copenhagen.

WOOD PULP was received at Glasgow during April as under:—Tadorna (ss): 40 bales from Ghent. Ardmore (ss): 136 bales from Gothenburg. Roumania (ss): 1,219 bales from Halifax. Scandinavian (ss): 100 bales from Ghent.

JUDGING from all accounts, the production of sulphite pulp in Canada is being developed at a rapid rate. The manufacturers seem to think that there is plenty of money in the industry.

SEVERAL mills are projected for the purpose of turning out sulphite for the British market.

IT is reported that lately there has been a good deal of sulphite pulp manufactured in Ontario for export to England and to the United States.

MR. CHARLES RIORDON, of the Riordon Paper Co., and Mr. Barber, of the Georgetown Paper Mills, are stated to be on the lookout for a suitable site for the erection of a large sulphite pulp mill.

A CORRESPONDENT writing from Toronto, states that there is nothing new to be reported concerning the agitation for an export duty on timber, save that its force seems to have quite died out for the time being, and save, further, the statement made in the House of Commons by Sir Louis Davies, Minister of Marine and Fisheries, to the effect that the government has the matter under consideration. "No proclamation has yet been issued," said Sir Louis, "but the question of an export duty on logs, bolts and pulp wood is being considered by the government."

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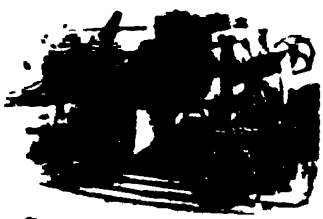

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BENTLEY

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BURY, near

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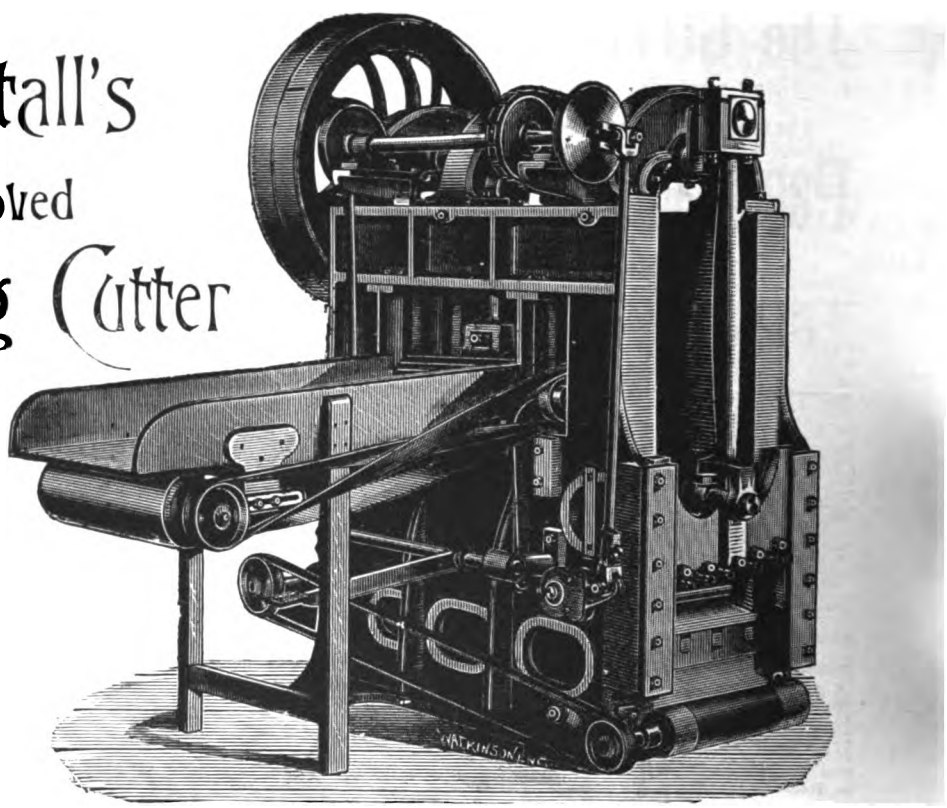

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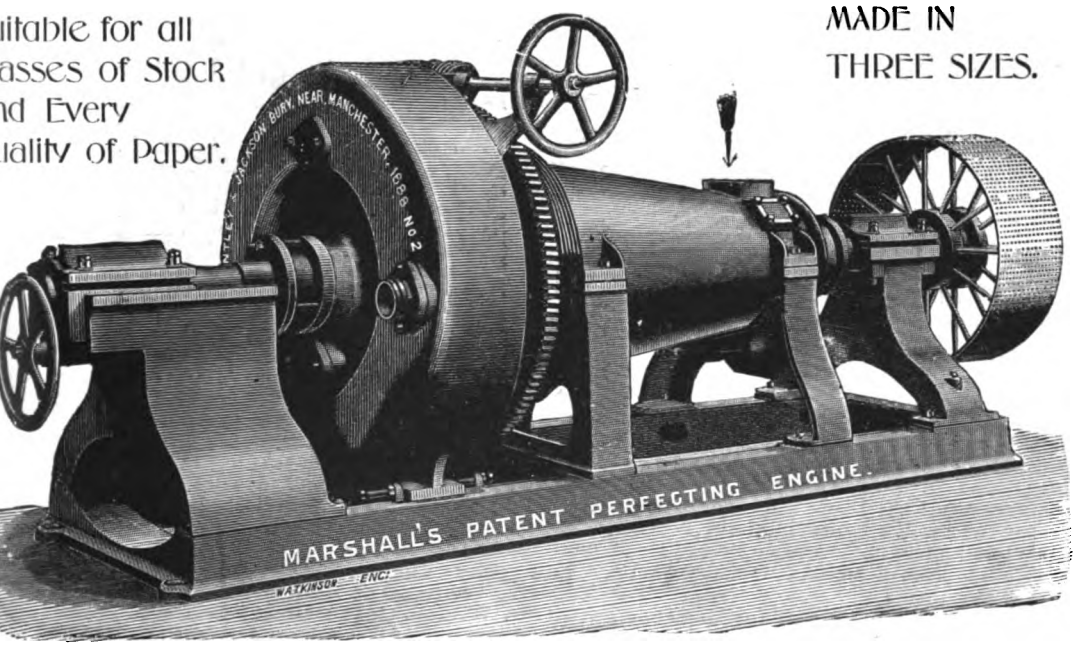

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

THE KELLNER-PARTINGTON PAPER PULP CO., LTD.—At a meeting of the directors of this company held on Tuesday, it was decided to pay an interim dividend for the half-year ended March 31st, 1898, of 6 per cent., free of income tax, payable May 18th, 1898.

THE MANCHESTER LINERS, LIMITED.—This company has been registed with a nominal capital of £1,000,000 in £10 shares, "to run lines of steamships between such port or ports as may from time to time be determined. and in particular between Manchester and Montreal in summer and Manchester and St. John, N.B., in winter." Mr. Edward Partington is one of the signatories to the memorandum of association, with 1,000 shares.

IN the paragraph, in our issue of April 22nd, relating to the presentation to Mr. T. Allen Marshall, of the firm of Messrs. T. J. Marshall and Co., the word "Ltd." was inadvertently added. The firm is a private one, and not a "limited company."

NATIONAL UNION OF PAPER MILL WORKERS.—The committee and friends of the Bury branch of the National Union of Paper Mill Workers recently held their annual dinner at the Royal Hotel, Bury. About 40 persons sat down to a repast catered for by Mr. F. D. Ballard. Afterwards a convivial gathering was held, under the chairmanship of Mr. W. Jennings, president of the branch. Mr. John Hall occupied the vice-chair. Songs were contributed by Messrs. J. Taylor, J. Waddicor, W. Duckworth, C. Waddicor, and H. Turner (humorist), the latter being frequently recalled. The usual loyal and patriotic toasts were honoured. Mr. J. T. Yates proposed "The National Union of Paper Mill Workers," to which the President replied. Mr. J. Wild proposed "Home Industries," and in doing so pleaded for the encouragement of the home paper industry as against the foreign paper industry. Mr. T. Wilson responded. On the motion of Mr. T. Leeming, a vote of thanks was accorded the chairman.

"THE WINDSOR MAGAZINE" for May contains the conclusion of Max Pemberton's powerful story, "Kronstadt." The next serial will be by Guy Boothby. The number contains, under the heading of "With Nansen in the North," a chat with Lieutenant Johansen by Archibald Cromwell. An interview with Lord Hawke, the captain of the Yorkshire cricket team, by Owen Conway, is full of interesting matter, and the contribution on American authors of to-day, by James Ramsey, is very entertaining. The number teems with illustrations, whilst amongst the writers are Grant Allen, Harry Furness (with sketches), John Arthur Barry, Bottrell Hoe, Percy Andreæ, Ernest E. Williams, etc.

THE dreadful death of an Oldham steeplejack, named Langham Booth, was reported on Monday by the Blackburn police. Deceased was employed in repairing a chimney-shaft at a Darwen paper mill when he lost his hold and fell a great distance. He was conveyed in an unconscious condition to Blackburn Infirmary, and, after lingering some time, succumbed to a fractured spine.

CLOSING OF SCOTTISH CHEMICAL WORKS.—On account of the increase in the price of coal, it has been decided to close meantime the Irvine works of the United Alkali Company, together with the caustic department of Messrs. William Henderson and Co.'s works. It has been found that it is impossible to compete with English and other firms, as the increase in the price of coal will add something like 7s. 6d. per ton to the caustic. Fully 200 men will be affected by the closing of the works.

G. K. LITTLEFIELD SYNDICATE, LIMITED.—Registered with a nominal capital of £12,000 in £1 shares (2,000 £7 per cent. cumulative preference), to adopt an agreement with G. K. Littlefield, and to acquire, own, and work the British patent rights for the manufacture of a material analogous to leather, and known as "Dermatinos." The subscribers are:—L. S. Dixon, The Mount, Blundellsands, paper merchant, 1 share; A. P. M'Allester, Myers-road West, Great Crosby, merchant, 1; L. Franklin, 19, Gower-street, W.C., boot manufacturer, 1; E. P. Fisk, Graigie Lea, Crescent-road, Liscard, salesman, 1; W. Merrick, 120, Bedford-street, Liverpool, plumber, 1; G. M. Brown, 93, Warren-street, Boston, Massachusetts, financial agent, 1; G. K. Littlefield, Newtonville, Massachusetts, U.S.A., inventor, 1. The number of directors is not to be less than three nor more than seven; the first are the above subscribers; qualification, 50 shares. The registered office is at 42, Castle-street, Liverpool.

AUSTRIA. — The prices of bookbinders' boards have lately been increased from 15 up to 40 per cent. The sales department of the leading mills turning out the raw material for this class of product is controlled by the Bank of Austria, which declines to deliver to any makers who do not conform to the new scale of charges.

THE May number of "The Strand Magazine" contains an illustrated interview with Mr. William Quiller Orchardson, R.A., and an account of "A Fat Men's Club." Grant Allen describes the further adventures of Miss Cayley, and L. T. Meade and Robert Eustace give another of their deeply interesting stories under the title of "The Brotherhood of the Seven Kings." "Savage Cricketers" are treated by William G. Fitzgerald, and "Welsh Queens of the May" by M. Dinorben Griffith. There are several other short stories and altogether some 140 illustrations.

"FASHIONS AND FANCIES" is a new monthly, price twopence, published by George Newnes, Ltd., which is likely to be widely appreciated. The first number, for May, is an excellent production.

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Printed and Published EVERY FRIDAY by W. JOHN STONHILL, at 58, Shoe Lane, London, E.C.

Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England:
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, MAY 6, 1898.

The Peebles Case.

A SIGH of disappointment will best express the feelings of papermakers in the decision given by the House of Lords in the appeal of Pasmore and others *v.* Oswaldtwistle Urban District Council. The trade, nevertheless, is greatly indebted to Messrs. Peebles for the persistent manner in which they fought for their contention, especially as they had to fight practically a combination of local authorities. It is unnecessary here to go into the particulars of the case, as the facts have already been presented to our readers, and on another page of this issue will be found a report of the judgment given by the Lord Chancellor. Few, perhaps, in the trade were so sanguine as to imagine that victory would be with Messrs. Peebles, and the question of getting rid of factory effluents satisfactorily solved; therefore false hopes have not been indulged in to any extent. At the same time papermakers, who are large ratepayers, and who are subjected to most harassing conditions, involving heavy expenditure, deserve better treatment and consideration at the hands of local authorities than is usually meted out to them.

* * *

The Proposed Combination of British "News" Mills.

DESPITE the belief in many quarters that the proposed "combine" will not go through, we learn that the parties interested are pushing forward negotiations, and that, following recent meetings both in Manchester and London, steady and satisfactory progress is being made. It is premature yet to give a list of the mills to be included in the proposed "combine," although it may be mentioned that the works of Thomas Owen and Co., Ltd., and the principal Lancashire mills—included in the former attempt at combination—are now freely mentioned. We understand that the auditors for the northern and southern districts are at present engaged examining the books of the various mills, and it is anticipated that in a month's time matters will be so far completed that the prospectus may be issued.

Viscose.

The Formation of the Manchester Viscose Company, Limited.

Since the introduction of viscose by Messrs. C. F. Cross, E. J. Bevan, and Clayton Beadle in 1892, many improvements have been introduced, and the various modifications by Mr. C. F. Cross particularly have conduced to successful results on a commercial scale.

At one time many difficulties confronted users, and consequently an opinion was expressed not altogether favourable to the material. The Viscose Syndicate, Limited, the owners of the patents, however, prosecuted their efforts, and under the personal direction of chemists with a knowledge of the subject, the directors have succeeded in developing the invention, with the result that the matter is no longer one of experiment but practical working. The applications of viscose have already been referred to in the *World's Paper Trade Review*, and although manufacturers have been rather slow to take up the material, there is no doubt its value will be more appreciated when better understood.

There has lately been registered the Manchester Viscose Co., Ltd., with a nominal capital of £10,000 in 10,000 £1 shares—7,300 ordinary and 2,700 founders. The founders shares have the right to two-fifths of the surplus profits of the company each year which shall remain after paying or providing for the payment out of such profits of a dividend at the rate of 5 per cent. per annum on the capital paid up on the other shares.

The company will acquire the rights and privileges of the Viscose Syndicate, Ltd., and the patents No. 8,700 of the year 1892 and No. 4,713 of the year 1896, etc., as set forth in an agreement between the Viscose Syndicate, Ltd., of the first part, the Continentale Viscose Compagnie of the second part, and the Manchester Viscose Co., Ltd., of the third part.

The following are the directors, whose qualification is £250 in shares:—

George Comber, Knutsford.
W. J. Crossley, Glenfield, Altrincham.
Edward Partington, Easton House, Glossop.
F. N. Smith, The Priory, Swinton Park, near Manchester.

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The Viscose Syndicate, Ltd., have the right to nominate a director. The registered office is at 5, Cross-street, Manchester.

British Wall Paper Co., Ltd.

This company has recently been registered with a nominal capital of £300,000 in 60,000 shares of £5 each. The registered office is at 13, Spring-gardens, Manchester.

Six several agreements have been entered into, the first, made April 22nd, between W. G. Wilkins and Co., Limited, of the first part, E. C. Ellis, W. G. Wilkins, H. A. Ellis, and S. Hall of the second part, and J. H. Walker, for this company, of the third part; the second, made same date, and expressed to be made between Walker, Carver and Co., Limited, of the first part, John Walker and H. Carver of the second part, and J. H. Walker, for this company, of the third part; (3) made April 14th, between D. Walker of the one part and J. H. Walker, for this company, of the other part; (4) made April 22nd, 1898, between J. Y. Shorrock, J. C. Statter, and T. W. Statter of the one part, and J. H. Walker, for this company, of the other part; (5) made April 21st, 1898, between Mitchell, Arnott and Co., Limited, of the first part, W. H. Arnott, W. Mitchell, and F. Mitchell of the second part, and J. H. Walker, for this company, of the third part; and (6) made April 26th, between J. H. Walker, on behalf of this company, of the one part, and W. G. Watkins, D. Walker, H. Carver, J. Walker, J. C. Statter, J. Y. Shorrock, and T. W. Statter, W. H. Arnott, W. Mitchell, and H. Thwaite of the other part.

The object is to carry on in all or any of their respective branches the businesses of manufacturers of and dealers in paper hangings, wall papers; as paper stainers, general paper merchants and manufacturers, etc.

The following signatories are credited with one share each:—

T. Roe, Litchurch, Derby.
W. G. Wilkins, Uttoxeter-road, Derby.
J. Walker, Lower Broughton, Manchester.
H. Carver, Orchard-street, Pendleton.
D. Walker, Middleton, near Manchester.
W. H. Arnott, Lowton, Newton-le-Willows.
W. Mitchell, Legh-street, Golborne.
J. C. Statter, Heywood, Lancashire.

The first directors—of whom there shall be not less than five—are to be elected by the signatories. Qualification, £500. Remuneration, £100 per annum for the chairman; vice-chairman, £50; ordinary directors, £25 each.

Stocks and Shares.

Changes in the paper share market are only fractional, but the general tendency is a downward one, after the recent advances. North of Ireland are down ⅛, and Star ord. are also ⅛ lower, with sellers. Olive Brothers are down ¼ on the week, as also are East Lancashire ord. and pref.; the bonus also are weaker. Peebles ord. report a fall of ⅛, and the pref. are easier fractionally. Collin's are 2s. lower and no buyers. On the other hand, Darwen are firm, and mark a rise of ¼. Bury ord. and Burnley have advanced ⅛ and are steady. Ramsbottom are stronger at a ¼ rise.

In chemical shares, United Alkali are stronger, the ord. being $\frac{1}{16}$, and the pref. $\frac{3}{16}$, higher; the debs., however, are ¼ per cent. lower. Bowman, Thompson's pref. are down again ¼, with sellers prominent. Brunner, Mond pref. are ¼ lower, and Castners 6d. Clayton Aniline are, however, firmer at $\frac{1}{16}$ rise. Steiner and Co. keep steady at unchanged rates.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2120

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices May 4th.
10	10	Bath Paper Mill Co. (Ld.)	5	11⅛—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	12—13
3½	5	Burnley Paper Co. (Ld.)	10	6⅛—6⅜
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref.	6	7⅛—7⅜
2½	3	Collin (Darwen) Paper ,,	nil	⅜—⅝
5	5	Darwen Paper Mill Co. "A"	15	11½—12
3½	5	do. do. "B"	15	9½—9⅝
10	10	E. Lancashire Paper Co. Ld.	nil	8—8½
10	10	do. do. 6% pref.	nil	8½—8⅝
5	5	do. do. bonus	nil	4—4½
100	100	Ekman Pulp & Paper Co. Ld. debs.	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	7—7½
5	5	Hyde Paper Works Co. ,,	nil	1½—2
2½	5	Kelln'r-Part'g't'n P'p Co,,	15	7⅛—8 1/16
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—107
4	5	N. of Ireland Paper Co. ,,	12½	9—9½
7	10	Olive Brothers ,,	10	7¼—7½
1	1	Owen, T. & Co. 6% pref	6	27/—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
100	100	do. do. debs.	5	112½—113½
5	5	Peebles (A. M.) & Son ,,	8½	7⅛—7⅜
5	5	do. 5% cum. pref.	5	6⅛—6⅜
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	7—7½
1	1	do. do. cum. pref.	5	1⅛—1⅛
4½	5	Roach Bridge Paper Co. ,,	10	5⅛—5⅜
5	5	Star Paper Co.	10	8⅛—8⅜
3	5	do. do. cum. pref.	10	6¼—6½
10	10	Waterlow & Sons non.-cum. def.	—	13⅜—14⅛
		do. do. non.-cum. pref.	4	13⅜—14⅛
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	6¾—7
10	10	do. do. cum. pref.	7	10⅛—10⅜
100	100	do. do. debs. (red. 1904)	6	104—100
10	10	Brunner, Mond & Co. (Ld.)	20	41⅞—42
3½	10	do. do. "New" ,,	20	16⅜—16⅝
10	10	do. do. 7% pref. ,,	7	17⅝—18
5	10	do. do. do. new issue	7	8⅜—8⅝
1	1	Castner-Kellner Co. ,,	—	21/—22/-
5	5	Clayton Aniline cum. pref.	6	5⅛—6
10	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11⅝
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	1 3/16—1 5/16
10	10	do. do. cum. pref.,,	7	7 1/16—8 1/16
100	Stock	do. mort. deb. (red. after 1901)	5	106½—107½

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IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

Situations Wanted.

FOREMAN desires Situation, thoroughly experienced in the making of tub-sized writings, E.S. writings, printings and news; first-class references.—Address, No. 7,266, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7266

WANTED, Re-engagement as Manager or Foreman, in mill making tub-sized writing papers; used to all qualities and modern methods of manufacture. Age 44; active and energetic; good references as to character and ability from first-class mills.—Address, No. 7,271, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7271

Machinery.

ONE REVOLVING BOILER, 18 feet long, 8-ft. diameter, made of $\frac{7}{16}$ and $\frac{1}{2}$-in. best boiler plates. Almost as good as new.

ONE REVOLVING RAG DUSTER, 4-ft. 6-in. diameter, 12 feet long; with driving gear complete. In good condition.

Both will be SOLD CHEAP. To be seen at Clyde Paper Mills, Rutherglen, N.B. 7270

Miscellaneous.

CORRESPONDENCE with first-class London firm desired by an Agent in Christiania with knowledge of Norwegian export paper trade. First-class references.—Address, Christiania, No. 7,258, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7258

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

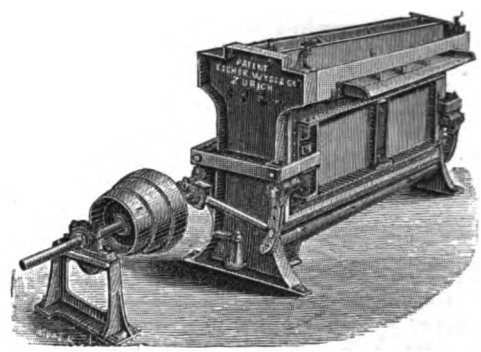
MILL for SALE.—Brown Mill of recent construction, with wide machine, excellent water supply, and outfall into tidal river; railway siding into mill-yard; room on site for extensions.—Address, No. 7,268, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7268

TO PAPER MANUFACTURERS and Others.—The Advertiser, who is a practical Papermaker of many years' standing, and is well known in the trade, is wishing to meet with a gentleman to join him in taking a paper mill for the manufacture of fine news and printings from esparto and other raw fibres, and for which papers he has an extensive connection.—Address in the first instance to A.Z., No. 7,269, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7259

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

OVER 100 AT WORK.

FACTS SPEAK FOR THEMSELVES–

The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES–

SUPERIOR to any other System for its Numerous Advantages as:

Large Production with any kind of Pulp.
No Stoppage for Cleaning.
Most Regular and Quite Noiseless Working
Little room taken up on the Machine, &c.

AGENT–

ALPH. STEIGER C.E.

16, MINCING LANE, LONDON, E.C.

GERBLEIM

Prepared after Mitscherlich's Method.

A Size (partly Animal) far more advantageous than Rosin-Size, READY FOR IMMEDIATE USE IN PAPERMAKING, continually gaining greater extension in Germany.

For particulars write to–

MITSCHERLICH'S FABRIK,
HOF i/ BAVARIA.

LACE PAPERS.

Best Workmanship–
Lowest Prices.

N. Heimann & Co., Berlin, Schwedterstr, 263

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PEMBROKESHIRE.

FOR SALE, BY PRIVATE TREATY,

THE LEASEHOLD PROPERTY,

known as

The Prendergast Paper Mills,

together with a

DWELLING HOUSE,

Garden and Out-premises, Orchard and Hayguar', also a Field adjoining containing 4 a. 1 r. 30. p., all held under a Lease for 21 years dated 20th August, 1894, at a Rent of £60 per annum free of tithe. The said Lease contains a clause enabling the Lessee to purchase the Freehold for the sum of £1,000.

The Mills contain all the requisite Machinery for Paper-making, and there is a plentiful supply of water from the River Cleddaw.

For further particulars and to treat apply to Messrs. T. Rule, Owen and Son, Estate Agents and Valuers, Haverfordwest; or to Messrs. Eaton, Evans and Williams, Solicitors, Haverfordwest. 1316

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	138	30	—
BELGIUM	1741	27	—
FRANCE	524	2	—
FINLAND	32	—	—
GERMANY	2753	22	—
HOLLAND	34175	8	—
NORWAY	3251	20	255
SPAIN	2	24	—
SWEDEN	4069	—	—
U.S.A.	3194	151	260

Including the Following:—

Quantity	From	Importer	Port
7 bales	Christiania	Bott & Co	London
16 ,,	,,	Lepard & Smith	,,
8 ,,	,,	J. Eberstein	,,
9 ,,	,,	F. E. Foulger	,,
12 ,,	,,	Cookson & Co	,,
16 ,,	,,	C. Morgan & Co	,,
8 ,,	Christiansand	Cookson & Co	,,
25 ,,	,,	W. Guppy	,,
76 ,,	,,	E. Lloyd	,,
111 ,,	Fredrikstadt	Olive & Partington	,,
19 ,,	Gothenberg	Becker and Wagner	,,
149 ,,	,,	J. Spicer & Son	,,
235 ,,	,,	Schenkenwald & Co	,,
248 ,,	,,	R. L. Lundgren	,,
92 ,,	,,	E. Saunders & Son	,,
11 ,,	,,	Crabb & Co	,,
50 ,,	,,	Alsing & Co	,,
34 ,,	,,	H. Skeed & Co	,,
7 ,,	,,	E. Lloyd	,,
56 ,,	,,	J. C. Brightling	,,
149 ,,	Norrkoping	J. Eberstein	,,
312 ,,	,,	Skarblacka	,,
2 ,,	Stockholm	Cookson & Co	,,
12 ,,	,,	A. Rosedale	,,
461 rolls	Skien	Brown, Brough & Co	,,
10 bales	,,	J. Hamilton	,,
51 ,,	,,	J. Spicer & Sons	,,
20 cases	,,	,, ,,	,,
3 bales	Trieste	P. Sabel & Co	,,
135 ,,	,,	Schonker & Co	,,
399 ,,	Uddevalla	D. Gulland	,,
38 ,,	,,	R. L. Lundgren	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	3647	199	307
ARGENTINE	—	76	42
AFRICA	264	38	404
ARABIA	—	27	41
BELGIUM	43	12	3
B. W. INDIES	13	50	—
CHINA	94	108	25
CANADA	—	102	—
CHILI	—	—	18
CHANNEL ISLES ...	—	—	7
CAPE COLONY	35	82	4
EGYPT	—	55	—
FRANCE	411	21	71
GREECE	44	—	—
GERMANY	7	12	—
HOLLAND	41	—	41
INDIA	42	335	285
JAPAN	220	62	—
MAURITIUS	—	2	—
MALTA	—	85	100
NEW ZEALAND... ...	268	170	414
PORTUGAL	79	11	12
SPAIN	—	13	23
SWEDEN	—	—	5
S. AMERICA	—	45	—
U.S.A.	249	—	35
W. INDIES	—	32	—

FROM GLASGOW.

CANADA	147	22	28
CHINA	84	—	—
INDIA	165	81	73
U.S.A.	53	—	—

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

320 b	Cologne	London	80 b	Rotterdam	London
403 ,,	Amsterdam	,,	454 ,,	,,	Liverpool
149 c	Ulrum	,,	5471 ,,	,,	Bristol
480 b	Newport News	,,	4615 ,,	,,	Manchester

WOOD PULP BOARDS.

400 b	Hambro	London	230 b	Hambro	Manchester
448 ,,	New York	,,	25 c	Christiania	Liverpool
367 ,,	Hambro	,,	100 b	Gothenburg	,,
1100 ,,	,,	,,	10 c	Boston	,,
50 c	Boston	,,	100 b	Gothenburg	,,
291 b	New York	,,	30 ,,	Malmo	Grimsby
10 c	Christiania	Manchstr	46 cr	Boston	Bristol
125 b	,,	,,	21 b	Rotterdam	Grngmth

MILLBOARDS.

15 b	Hambro	Goole	200 b	Hambro	Harwich
2608 ,,	Delfyzl	,,	4537 ,,	Harlingen	Hull
67 r	Harlingen	Harwich	7750 ,,	,,	,,

CARDBOARDS.

10 c	Boulogne	Goole

PASTEBOARDS.

400 b	Gothenburg	Hull	96 b	New York	London
840 ,,	Trieste	Liverpool	920 ,,	Trieste	Liverpool
8 ,,	Hambro	,,			

b—bales. c—cases. r—rolls. cr—crates.

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c., &c., at the Ports of London, Liverpool, Manchester, Runcorn Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams

Telegrams—"STONHILL, LONDON."

CHEMICALS.—The market is rather unsettled. Shipments to the Baltic, however, are fairly good. There is a good demand for AMMONIA ALKALI 58 per cent., standing at £4 5s. to £4 15s., and prices of SODA ASH, both Carbonated and Caustic, are well maintained. CAUSTIC SODA is easier, 70 per cent. being quoted £7 2s. 6d. to £7 5s. BLEACHING POWDER is dull, and the tendency is towards lower prices. SODA CRYSTALS stand at £2 17s. 6d. to £3, and SALT CAKE from 20s. to 21s. per ton on rails. SULPHUR is steady at £4 15s. to £5. Reports from Scotland state that the Irvine Chemical Works are to be closed, the cause being attributed to the increase in the price of coal. The caustic department of Messrs. William Henderson and Co.'s works is also to be stopped. BLANC FIXIE f.o.b. Tyne is easier; CHLORIDE OF BARIUM shows a decline; and HYPO-SULPHITE OF SODA at £4 15s. is 5s. lower.

Alum (Ground), tierces	...	f.o.b. Liverpool	24/-	5	5 0
,, ,, barrels	...	,, ,,	24/-	5	15 0
,, ,, tierces	...	,, Hull	24/-	5	2 6
,, ,, ,,	...	Goole	24/-	5	2 6
,, ,,	...	f.o.b. Glasgow	24/-	5	5 0
Alum Lump) ,,	...	f.o.b. Liverpool	24/-	4	12 6
,, ,, barrels	...	,, ,,	24/-	4	15 0
,, ,, tierces	...	,, Hull	24/-	4	12 6
	...	Goole	24/-	4	12 6
,, ,, ,,	...	London	24/-	5	2 6
,, ,, ,,	...	f.a.s. Glasgow	24/-	4	12 6
Alumina Sulphate	...	f.o.b. Tyne	net	3	11 3
Aluminoferric Cake, slabs		Liverpool ...	...	2	15 0
,, tierces		,, ...	...	3	2 6
Alumina Cake, ... slabs		Glasgow ...	...	2	10 0
Blanc Fixe	...	f.o.b. Tyne	net	6	15 0
Bleach, ...	...	,, ,,	net	6	0 0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5 0
,, (hard wood)	...	f.o.b. Liverpool	net	6	0 0
,, (soft wood)	...	landed London	net	6	5 0
Borax (crystals) ...	...	... ...	net	14	10 0
,, powdered ...	...	... ...	net	15	0 0
Chloride of Barium	...	f.o.b. Tyne	net	6	12 6
Caustic White 76%	...	f.o.b. Liverpool	net	8	7 6
,, 74%	...	,, ,,	net	8	2
,, 70%	...	,, ,,	net	7	10 0
,, 70%	...	f.o.r. Lancs.,	net	7	7 6
,, 60%	...	f.o.b. Liverpool	net	6	10 0
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5	15 0
,, 60%	...	f.o.b. Liverpool	net	5	17 6
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4	12 6
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4	15 0
,, ,, 48%		,,	net	4	12 6
,, ,, 58%		f.o.r. Widnes	net	4	10 0
,, ,, 48%		,, ,,	net	4	5 0
,, Ammonia 58%		f.o.b. Liverpool		4	5 0
,, ,, 48%		,,		4	0 0
,, Caustic 48%		,,		4	12 6
,, ,, 57-58%		,,		4	17 6
Hypo-Sulphite of Soda... 1s-ton lots		f.o.r Tyne 10 ton lots		4	15 0
		ex ship Liverp'l net		5	0 0
Oxalic Acid	...	f.o.b. Liverpool	3½	per lb	3
Salt Cake	...	on rail, in bulk		1	0 0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35	0 0
,, (2nds)	...	,,		33	0 0
Soda Crystals ...	...	f.o.b. Tyne	net	2	17 6
,, ,, ...	...	ex ship Thames	24/-	2	17 6
,, ,, ...	...	f.o.b. Liverpool	5%	3	0 0
Sulphur, roll ...	...	f.a.s. works	24/-	6	5 0
,, flowers ...	...	,, ,,	24/-	7	5 0
,, recovered	...	,, ,,	24/-	4	15 0
Sulphate of Ammonia	,,	,, ,,	24/-	8	10 0
,, of Copper	...	,, Liverpool	5%	16	10 0

FOREIGN.—F.o.b. Continental port:

Hypo-Sulphite of Soda 10-ton lots casks	...	4	10	0
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn		3	15	0
Blanc Fixe (c.i.f. London)	...	7	0	0
White Sugar of Lead	26 0 0—27	0	0	
Zinc Oxide	...	19	5	0
Bleaching Powder	...	5	15	0

CHEMICAL WOOD PULPS.—A better feeling is reported in the chemical wood pulp market. There is an improved demand for SULPHITE. American supplies are now almost stopped, and the Scandinavians report that they have lately received enquiries from the United States.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8 12 6	to 9	0 0
,, Superior ,, ...	9 5 0	,, 9	10 0
,, Bleached, ...	11 10 0	,, 15	0 0
SODA, Unbleached, Common ...	8 5 0	,, 8	10 0
,, Extra...	8 15 0	,, 9	5 0
,, Bleached	10 10 0	,, 12	0 0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

BISULPHITE, Unbleached, dry, 1st quality	...Frs.	22.75	to 23.5
,, Bleached...		33	,, 36
SODA AND SULPHATE, Unbleached, 1st. quality		22	,, 22
,, ,, ,, 2nd quality		19	,, 19.50
,, ,, ,, Bleached		27	,, 34

AMERICAN QUOTATIONS

AMERICAN SULPHITE, Unbleached	$1.2½	to 2
SODA Bleached	1.90	2.10
FOREIGN SODA, Unbleached ...	2.15	2.10
,, Bleached	2.70	2.80c.
,, SULPHITE, Bleached...	3.75	,, 3.90c.

MECHANICAL WOOD PULPS.—British consumers are rather slow in concluding business. In spite of the small demand, however, for the British market, the Scandinavian makers have lately sold considerable quantities of pulp at prices that show an advance compared with the rates ruling a few weeks back.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£6	10	0
Pine, Dry	£4 8 9	to 4	12 6
,, Moist	2 5 0	,, 2	7 6
Brown, Dry	4	15	0
,, Moist	2	10	0

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt.)

Pine Pulp, 50% moisture, ordinary ...	Frs. 9.50	to 10.50	
,, ,, fine ...	11	,, 12	
,, dry, ordinary	10.50	,, 11	
,, ,, fine	11	,, 12	
Aspen ,, fine	15	,, 16.50	
Half-Chemical Brown, 50% moisture	10.75	,, 11.25	
,, ,, dry ...	11.75	,, 12.25	

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) ... $13

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IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port.
88 brls.	Ghent		London
20 bales	,,		,,
29 ,,	Rotterdam		,,
255 rolls	New York		,,
1600 bales	Christiania		,,
40 ,,	Antwerp		,,
127 ,,	Gothenberg	R. L. Lundgren	,,
144 rolls	,,	,,	,,
340 bales	,,	Ronaldson and Co	,,
1 ,,	,,	Bott and Co	,,
43 ,,	,,	Spicer and Son	,,
673 ,,	,,		,,
106 brls.	Ghent		,,
640 bales	Fredrikstadt		,,
1616 ,,	,,	J. Sharp	,,
200 ,,	,,		,,
933 ,,	St. John's		,,
8665 ,,	Drammen		,,
162 ,,	Rotterdam		Liverpool
1331 rolls	Boston		,,
448 bales	Portland		,,
320 rolls	,,		,,
320 bales	St. John		,,
1801 rolls	Boston		,,
199 bales	Gothenburg		,,
1600 brls	Oporto		,,
12 cases	Christiania		,,
1171 rolls	Boston		,,
231 bales	Gothenburg		Hull
35 ,,	,,		,,
1440 ,,	Drontheim		,,
20 ,,	Bergen		,,
969 ,,	Christiania		,,
242 ,,	Hango		,,
1646 ,,	Gothenburg		Manchester
1450 ,,	Christiania		,,
1000 ,,	Fredrikshald		,,
600 ,,	Skien		,,
300 ,,	Risor		,,
5 ,,	Rotterdam		,,
3867 ,,	Sarpsborg		,,
556 ,,	Gothenburg		Granton
279 ,,	Bergen		,,
60 ,,	Ghent		Goole
3572 ,,	Gothenburg		Preston

Totals of Wood Pulp from Each Country:

BELGIUM ...	120 bales	NORWAY ...	12 cases
,, ...	194 brls.	PORTUGAL...	1000 brls.
CANADA ...	1253 bales	SWEDEN ...	11489 bales
FINLAND ...	242 ,,	,, ...	144 rolls
HOLLAND ...	196 ,,	U.S.A. ...	448 bales
NORWAY ...	18779 ,,	,, ...	4878 rolls

ESPARTO.—Enquiry for new crop Spanish contracts has slackened, and as sellers are inclined to restrict their further engagements for the present there is little to record. Other descriptions are quiet and firm at quotations.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follows:

Spanish—	Fair to Good	£4 15 0 to	5 2 6
,,	Fine to Best	5 6 3 ..	5 12 6
Oran—	Fair to Good	2 17 6 ..	3 0 0
,,	First Quality	3 2 6 ..	3 5 0
Tripoli—	Hand-picked	2 17 6 ..	3 0 0
,,	Fair Average	2 12 6 ..	2 15 0
Bona & Philippeville	... ...	3 2 6 ..	3 5 0

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
565 tons	Arzew		London
470 ,,	Alicante	Morris and Co	Granton
340 ,,	Agullas	,,	,,
3500 bales	Oran		Greenock
33 tons	,,		,,
830 ,,	,,	R. H. Hay and Co	Granton
760 ,,	,,	Morris and Co.	Glasgow

STRAW.—Prices:

Oat Straw, ...	c.i.f. London	37/0 ; f.o.r. Goole,	37/6
Wheat ,, ...	do.	37/0 ; do.	37/0
Rye ,, ...	do.	50/6 ; de	5 /6

STRAW PULPS.—Steady enquiry.

Prices, c.i.f. London, Hull or Leith.

German, dry, No. 1	£14 0 0
,, No. 2	£13 0 0

FOREIGN RAGS.—There is a good British demand for French stock and Belgian packers report a better enquiry; German rags are rather neglected. The demand for the United States is steady and prices firm. Imports at British ports during the past week were as under:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
36	Harlingen	Hull	83	Hambro	Goole
77	Bordeaux	,,	78	Dieppe	,,
47	Stettin	,,	214	Ghent	,,
263	Copenhagen	,,	102	Antwerp	,,
46	Bremen	,,	98	Boulogne	,,
185	Ghent	,,	79	Hambro	Grimsby
43	Rotterdam	,,	121	Rotterdam	,,
1	Rouen	,,	60	Antwerp	,,
105	Konigsberg	,,	574	Dieppe	,,
173	Amsterdam	,,	147	Bordeaux	Liverpool
136	Hambro	,,	39	Bombay	,,
342	St. Brieux	,,	117	Alexandria	,,
12	Bordeaux	London	144	Lisbon	,,
67	Ghent	,,	69	St. Nazaire	,,
16	Treport	,,	31	Rotterdam	Bristol
50	Philadelphia	,,	19	Amsterdam	,,
557	Rouen	,,	15	New York	,,
73	Gothenburg	,,	270	Ghent	Leith
94	Antwerp	,,	27	Rotterdam	,,
8	Cadiz	,,	20	St. Malo	Sthampton
146	Dunkirk	Goole	69	St. Nazaire	Newhvn

Totals from Each Country:

BELGIUM ...	552 bales	INDIA ...	39 bales
DENMARK ...	263 ,,	PRUSSIA ...	105 ,,
EGYPT... ...	117 ,,	SWEDEN ...	73 ,,
FRANCE ...	2206 ,,	SPAIN ...	152 ,,
GERMANY ...	392 ,,	U.S.A.	65 ,,
HOLLAND ...	450 ,,		

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 2/0; Hull and Goole, 12/6 Liverpool and Leith, 10/6; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/6	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, ,, (extra)	14/6	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/6	White & Cream Linens	35/0
Outshots No. 3 ...	10/0	White Cuttings ...	22/0
Seconds No. 4 ...	8/6	Unbleached Cuttings	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/0

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste	10/0; Fair ditto 8/0
Flax Card Waste	6/0
Hemp Waste, No. 1 8/0; No. 2	3/0

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leit 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2/7½	,, No. 3 ...	6/3
Dark Prints... ...	2/1½	W. Untarred Rope	9/0
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope (coils)	8/0	Not free from wood	5/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ...	8/0
SPFFF	18/0	LFX Second ditto ...	7.0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	10/0
SPF	11/0	CFB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares	8/0
White Rope... ...	6/0	Jute, No 1 6/-; No. 11	5/0

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STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/6	LFB (Blue)	4/0
SPF	11/0	CSPFFF	10/0
FF	8/0	CSPFF	16/0
FG	8/6	CFB (Blue)	/0
FFX	7/0	CFX (Coloured) ...	4/0

FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I ...	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Bl e Linens... ...	7/6
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III ...	8/9	New White Cuttings	20/0
Coloured Cotton ..	3/6	,, Stay ..	15/0

PRUSSIAN RAGS.

O.i.f. London, Hull, or Leith.

SPFF	16/0	CC (Cotton)	4/6
SPF	12/6	Jute I	3/0
FG	10/0	,, II...	2/0
LFB	8/0	Rope I...	8/
FF	5/6	,, II ...	6/0

NORWEGIAN RAGS.

O.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred) ...	8/3-9/0	2nd Canvas ...	7/
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny ...	3/6-5/0
Best Canvas ...	11/0-12/0	Mixed ...	2/6-2/

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons...	2/6	Sail Cloth or Canvas	5/
2nd ,, ,, ...	2/6	Rope, Thick	6/
Blue Cottons... ...	1/3	,, Small	4/
Coloured ,, ...	1/3		

* ,, at Smyrna and Salonica.

HOME RAGS.—Reports from London, Bristol, Manchester, Edinburgh and Dublin, show that there is a steady enquiry, and that prices are without quotable change.

LONDON

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/6
,, (good London)	17/0-17/6	,, No. 3	5/
Outshots (selected) ...	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary) ...	9/0	White Rope ...	3/6-5/
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/
Country do. ...	4/0-6/6	Coil Rope	9/
London Thirds ...	1/3	Bagging	1/3-1/
Country do. ...	2/0	Gunny	2/0-2/

BRISTOL:

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second Do. ...	9/6-10/
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging... ...	2/6	Tarred Manilla	6/0

MANCHESTER:

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging...	2/6-3/
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares... ...	2/6-3/0

EDINBURGH:

Superfines	15/0	Black Cottons ...	2/6
Outshots	12/0	W. Manilla Rope	7/-
Mixed Fines...	14/0	Tarred Manilla Rope	5/6
Common Seconds ...	7/0	,, Hemp Rope...	8/0
First do.	10/0	Rope Ends (new) ...	6/0
Prints	5/0	,, ,, (old) ...	4/0
Canvas (best)	15/0	Bagging...	2/1
2nd	8/	,, (clean)...	3/0-4'

GLASGOW.

Fines	12/6-16/0	Canva No. 1.	15/
Blues	4/6	,, No. 2.	10/0
Common Blues... ...	3/3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	

DUBLIN.

Whit Cuttings ...	16/0	Mill Bagging	2/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp	6/0
Light Prints	2/6	Rigging	10/0
Black do.	1/6		

JUTE.—Prices:

Good White	£15 0 to £16 10	Common	£7 10 to £9
Good	£13 0 to £14 10	Rejections	£6 10 to £8 10
Medium	£10 0 to £12 10	Cuttings	£3 0 to £5 0

WASTE PAPERS. — Moderate demand prices well maintained.

Cream Shavings ...	10/0	Small Letters ...	3/3
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns	3/3
White Waste ...	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets ...	3/0
Blue Paper	2/0	Strawboard Cuttings	1/0
Crushed News	2/0	Jacquards	7/6

For Export: 2s/- per ton extra

FLOCKS.—There is very little change in Cotton Flocks, a fine quality being quoted at £2 10s. per ton at works. Other flocks, which have advanced 5s. per ton, are reported scarce, large quantities having been taken off the market for upholstery purposes.

STARCH.—Market firm.

F.o.r. London, less 2½%

Maize—Crisp, £9 10/-; Pearl, £7 5/-; Powder, £7 15/- Special £14.
Farina—Prime, £12 0/-; B.K.M.F., £14 0/-.

Delivered, less 2½%:

Rice—Special (in chests), £19 0/-; Crystal (in bags) £18 10/-. Granulated (in bags) £17 10/-.
Oextrine—£15

SIZING.—There is a steady demand and stocks are reported nil. Raw material is scarce and high in price. The American market is unsettled; business, however, with the colonies and Japan is increasing.

English Gelatines per cwt.	90/0 to 120/0		
Foreign ,, ...	70/0	,,	100/0
Fine Scotch Glues	45/0	,,	60/0
Long Scotch Glues	35/0	,,	40/
Common Black ,, ...	25/0	,,	28/0
"Town" Glues	38/0	,,	45/0
"Bone" Glues	26/0	,,	30/0
Foreign Glues	28/0	,,	35/0
Bone Size	5/6	,,	10/0
Gelatine Size	6/6	,,	10/0
Dry B.A. Pieces	50/0	,,	55/
,, English Pieces	35/0	,,	45/0
Wet ,, ,, ...	8/6	,,	9/0
,, Sheep Pieces	3/0	,,	4/0
Buffalo Hide Shavings	32/0	,,	40/0
,, Picker Waste	32/0	,,	35/0

ROSIN. — Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WG	WW
4/9	4/10½	5/0	5/1½	5/6	5/9	6/-	6/3	6/9	7/3	8/-

COLOURS.—Prices are nominally as follows:

Mineral Black ...	cwt.	3/6	PASTE COLOURS with
do. superior ...	,,	4/0	60% of colour, as follows
Pure Ivory Black	,,	12/0	Orange Pulp ... cwt.
Ochre	,,	2/3	Golden Yellow Pulp
French J. C. Ochre	ton	60/0	Lemon ,, ,, cwt.
Chrome (pure) ...	cwt.	40/0	Prussian Yellow ,,
Red Oxide	,,	4/6	Green (free of arsenic
Umber, Devonshire	,,	50/0	Paste Blue, 20% ...
do. Turkish ...	,,	40/0	,, 33% ; 26/0; 45%
Lamp Black ...	,,	5/0-7/6	Imperial Yellow (dry
Ultramarine (pure)		35/0-45/0	(less 2½% d/d)
Cochineal	lb.	4/4-2/0	

METALS. — LONDON: COPPER quiet; TIN steady; LEAD easy. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	51	16	3	52	1	3
,, three months	52	6	3	52	11	3
Tough	55	5	0	55	10	0
Best selected	56	5	0	56	15	0
Strong Sheets	63	0	0	—		
TIN—						
Fine foreign, cash	65	7	6	65	17	6
,, three months	66	1	3	66	11	3
LEAD—						
Spanish...				13	10	0
English...				13	15	0

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MINERALS.—There is a good demand for CHINA CLAY and FRENCH CHALK; prices firm. MINERAL WHITE keeps steady in price, although the demand for the best qualities is greater than the supply, and orders are now awaiting their turn. SATINITE and SNOWDRIFT are in good request.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers' works:

Superfine	28/0	less 2½ %; del. Lancashire ...		38/0
Pottery Super.	24/0	,,	,, ...	34/0
Ball Seconds ...	20/0	,,	,, ...	30/0
Seconds	15/0	,,	,, ...	25/0
Thirds	11/0	,,	,, ...	21/0

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 9/0 to 23/6, bags 4/0 and casks 9/6 per ton extra; delivered Lancashire 38/0 to 41/6 (for best papers); f.o.r. London, in casks 45/0 per ton; f.o.b. Liverpool in 5 cwt. casks 44/- to 50/0.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, 59/0, 64/0, 73/6, and 77/6 per ton, according to quality less 2½ %.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 2/6 per ton of 10 bags

Superfine Hardening, f.o.r. works, 40/- to 42/-.

Patent Hardening (2 ton lots) f.o.r. Lancs., £35/0.

Snowdrift (Paper Toughener), in ton lots, 12/- per cwt

Magnesite (containing 98 % Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.

Magnesite (in lump) 39/6 per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.

Asbestos, brown grades, £12 to £14 12/6.

Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.

Bauxite, minimum alumina, 60 %, 16/3 f.o.b.

Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.

Satinite, £3 to £3 6s. 6d., in casks, f.o.b Liverpool or Manchester.

Whiting, f.o.b., 10/6 to 12/3 per ton.

Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.

Hydrate of Alumina, £12 10/0.

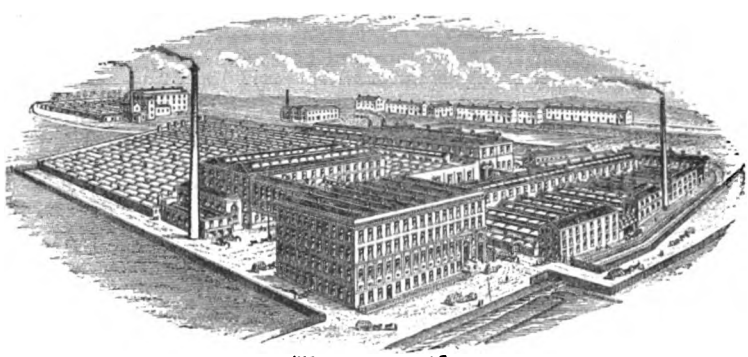
LIME—The present price is 10/6 per ton f.o.r

TURNER BROTHERS,

SPOTLAND, ROCHDALE.

Telegrams—
"TURNERS ROCHDALE."

TELEPHONE NO. 3.



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Saves 20 to 30 per cent. of Starch.

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SCANDINAVIA.

TWO NEW paper mills are reported to be projected at Drammen, which town is practically the most important centre for the exportation of chemical and mechanical pulp. Holmens Bruks is the only paper mill there at present, but it is said to be somewhat hampered in its operations owing to the need of extension and want of capital. One million kroner (over £50,000) is to be paid by the new company for the Holmensmill, and a similar sum for the Hellefos Traesliberi mechanical pulp mill, in the same neighbourhood. When the projected alterations and additions are carried out the new concern expects to reach an annual production of 14,000 tons. Three millions of kroner is said to be the capital of the company, half of which is already assured.

—o—

FRANCE.

THE exploitation of the esparto trade is still a favourite subject with the French, although they use so little of the material themselves. Another attempt to introduce French capital into this industry will probably be made shortly, a new company, to be directed from Paris, being in the preliminary stages of formation. The experiment at the mill of Fos-sur-mer, near Marseilles, of making esparto pulp for supply to papermakers apparently proved a failure. The mill has now been transformed into a paper factory of the ordinary character, and the arrangements for placing the product (chiefly pure esparto papers) on the market have just been completed. The new manager is M. Verdet; it will be remembered that Mr. Grozier, the late manager at Catteshall (H. Spicer and Co.), put in a good deal of time at this mill whilst the alterations were in progress. Even under the present conditions the mill opens up what is practically a new industry, French-made esparto papers being hitherto a novelty, most of the grass having been imported into the United Kingdom.

—o—

GERMANY.

THE MITSCHERLICH LAW SUIT.—The friendly settlement of this law suit, by which a number of paper mills agreed to pay the sum of 650,000 marks to Professor Mitscherlich, and the latter was officially acknowledged as the first promoter of the German sulphite pulp trade, seems to have given entire satisfaction to all parties. Mr. Carl Hofmann, who acted as arbitrator, received from Professor Mitscherlich a silver table ornament, and from the paper mills two Swiss landscapes, painted in oil by Munich artists, as well as a letter expressing satisfaction and thanks for his services.

LEIPZIG.—The Chamber of Commerce reports that business in the paper trade last year was animated. The production was increased by the erection of additional machines. There was no improvement in prices. Manufacturers of wall papers complain that unreasonable credits are demanded by customers. A convention lately arranged, however, is expected to exercise a favourable influence upon prices.

—o—

UNITED STATES.

CONTRACT FOR PAPER FOR AMERICAN BANK NOTES, ETC. — Bids were recently opened at Washington, D.C., for paper for bank notes, bonds, certificates, cheques, and other Government securities, except stamps. The bids were as follows:—George La Monte, New York, cheque paper, 25 cents per pound, bid rejected; Kingsland Paper Mills, Franklin, N.J., bank note paper, 33 cents per pound, bid rejected; Crane and Co., Dalton, Mass., bank note paper, 43½ cents per pound, and cheque paper, 33½ cents per pound.

PAPER STOCK IN BOSTON.—Judging by the general condition of the paper market business should be fairly good in paper stock. The makers of news paper are doing a most excellent business, but as their purchases are mainly wood pulp and chemical fibre the rag market is not affected to any degree. The makers of book and writing papers on the other hand are doing a very fair business, and it naturally is felt in the cotton rag market. Manufacturers, however, are purchasing only as they absolutely need stock, working very conservatively. Of the old cottons, the greatest demand is for Nos. 1 and 2 whites. Common seconds and thirds and blues are held very steady in price. In new cottons trade is of fair proportions. New calicoes, shirt cuttings, and shoe rags are all wanted, and are well maintained in price. Offerings of that class of stock are quite light. Business in old papers also holds up quite well. Books, letters, and ledgers are all wanted, and are well maintained in price. The market in folded news is quite steady, ranging in values from 45 to 50c. The stock is kept cleaned up quite well. Old waste papers are very quiet. The call for bagging is rather light and prices lack strength. Manilla rope is held up very well indeed.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included the following:— To London, 1,700 packages and 639 bundles; Liverpool, 221 packages and 524 bundles; Manchester, 132 packages and 671 bundles; Hull, 318 packages; Antwerp, 40 packages; Amsterdam, 5 cases; Copenhagen, 3 cases; Hamburg, 3 packages; and Rotterdam, 203 packages. Shipments to Australasia amounted to 464 packages; Africa, 20 packages; B. Honduras, 40 packages; Brazil, 107 packages; B. W. Indies, 291 packages; Christiania, 3 cases; and Mexico, 72 packages and 48 cases.

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AMERICAN IMPORTS OF

Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
9 cases	Antwerp	Kupfer Bros	New York
4 ,,	,,	Campbell and Co	,,
62 ,,	,,	Vandergrift and Co	,,
5 ,,	,,	P. Ruttmann	,,
100 ,,	,,	J. W. Hampton	,,
9 bdls.	,,	W. Spiegelberg	,,
14 ,,	,,	Campbell and Co	,,
2 cases	,,	A. Schurshire	,,
8 ,,	Hamburg	A. Kraut	,,
33 ,,	,,	Dingelstedt and Co	,,
1 ,,	,,	Ginn and Co	Boston
8 ,,	Hull	J. Hunter	New York
20 ,,	Havre	Druckleib and Co	,,
70 ,,	,,	American Tobacco Co	,,
6 ,,	Liverpool	Dennison Mfg. Co	,,
3 ,,	,,	B. and O. Meyer	,,
1 ,,	,,	Appleton and Co	,,
7 ,,	,,	Frost and Adams	Boston
4 ,,	,,	Hall and Co	,,
5 ,,	,,	To order	,,
27 ,,	London	Dickinson and Co	New York
2 ,,	,,	Stone and Co	,,
3 ,,	,,	G. J. Kraft	,,
3 ,,	,,	T. Ter Kuyle	,,
6 ,,	Rotterdam	Elmer and Amend	,,
8 ,,	,,	Dingelstedt and Co	,,
47 ,,	,,	Amslnck and Co	,,
7 ,,	Yokohama	Smith, Baker & Co	,,

CHEMICAL FIBRE.

100 tons	Antwerp	R. Helwig	New York
35 ,,	Copenhagen	S. Goldman	,,

MANILLAS.

116 bales	Leith	Perkins, Goodwin	New York
156 ,,	,,	Hempstead and Co	,,
76 ,,	,,	Small and Co	,,
27 ,,	London	E. P. True	Boston
262 coils	,,	Westhorp and Co	,,
23 bales	Liverpool	Butterworth and Co	,,
183 ,,	N. Calcutta	Ralli Bros	New York

RAGS.

153 bales	Antwerp	A. Katzenstein	New York
70 ,,	,,	Salomon and Co	,,
87 ,,	Bremen	Lewy Bros	,,
822 ,,	Ghent	Train, Smith & Co	,,
38 ,,	Glasgow	J. Libmann and Co	,,
114 ,,	Hamburg	Salomon Bros.	,,
71 ,,	,,	A. Kazenstein	,,
34 ,,	,,	Castle and Gothell	Boston
63 ,,	,,	E. P. True	,,
223 ,,	,,	Salomon Bros	,,
84 ,,	,,	,,	,,
66 ,,	Hull	J. Pirnie	New York
180 ,,	Leghorn	Castle and Gotthell	,,
33 ,,	London	Train, Smith and Co	,,
71 ,,	,,	Castle and Gothell	,,
277 ,,	,,	Train, Smith & Co	Boston
100 ,,	,,	E. P. True	,,
129 ,,	,,	Butterworth and Co	,,
42 ,,	,,	Castle and Gothell	,,
15 ,,	,,	Springfield Paper Co	,,
111 ,,	,,	Jessup & Moore	Philadelphia
88 ,,	Liverpool	Butterworthand Co	Boston

WASTE PAPERS.

692 bales	London	Train, Smith & Co	New York
73 ,,	,,	Castle & Gotthell	,,
129 ,,	,,	Train, Smith and Co	Boston
76 ,,	,,	Dutton and Co	,,
55 ,,	,,	Westhorp and Co	,,
147 ,,	,,	Wheelwright Paper Co	,,
91 ,,	Liverpool	Train, Smith and Co	,,
654 ,,	,,	Dutton & Co	,,

BLEACHING POWDER.

156 cks.	Liverpool	J. L. & D. S. Riker	New York
242 ,,	,,	,,	Boston

CAUSTIC SODA.

Quantity	From	Importer	Port
50 drums	Liverpool	Hill's Son & Co	New York
242 ,,	,,	,,	Boston
75 bdls.	,,	J. L. & D. S. Riker	,,

SODA ASH.

65 cks.	Liverpool	Wing and Evans	New York
620 bgs.	,,	Brown Bros.	Philadelphia

CHINA CLAY.

400 bbls.	Antwerp	E. Tilfele	Philadelphia

SIZING.

74 bgs.	London	Baeder, Adamson & Co	Boston
358 ,,	Liverpool	To order	,,

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CHALMERS, E. & Co., Ltd., Bonnington Leith.

MULLER, A. E., 9, Fenchurch Street, Lon- don, E.C.

SCHNURMANN, J., 148, Wool Exchange, London, E.C. Importer and Exporter of Paper Stock, Woollen Rags, Waste, etc.

STEEL.

MAKIN, Wm. & SONS, Sheffield. Estab- lished 1736. Roll Bars, Plates, Cutter Knives, Doctor Blades etc.

STRAW.

UNDERWOOD, E. & SON, Ltd., Brent- ford, London, W. Press-packed Oat, Wheat, or Rye Straw, delivered to the chief British ports or railway stations.

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ALSING & Co., Ltd., 110, Cannon Street, London, E.C. Agents for the well known "K.K." Soda Pulp: also Sulphite and Mechanical.

AUSTIN & ELTRINGHAM, 21, Old Corn Exchange, Manchester. Wood Pulps, Satinite, Sulphate of Alumina, and all Papermakers' Chemicals and Colours

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STRAINERS.

Improvements in apparatus for straining paper pulp are claimed by Mr. J. Smith, engineer, of South Hylton, Durham, who has recently been granted a patent.

In his specification he states that in the arrangement of vat generally used at present the horizontal strainer plate is fixed to the sides or bottom of the vat, separate from the vibrating plate or disc. This vibrating plate receives an up and down motion by means of a crank or other mechanism. The joint between the vat and vibrating plate or disc is kept tight in order to retain the pulp, and this is effected by means of a thin flat sheet or strip of india-rubber fixed to the vat and vibrating plate. The movement of the vibrating plate causes alternately a partial vacuum and compression in the part of the vat between it and the strainer plate, the result being that the holes or slots in the strainer plate are kept open and clean.

According to the patentee, this form of joint between the vibrating plate and the vat only lasts a short time, and has often to be renewed, therefore instead of using india-rubber of a flat section, he suggests a rubber of a solid circular section, or a circular section with a hollow core, or a pneumatic tube. A flange or rim of suitable form, and having a recess to suit the rubber band or tube is fixed to or in one piece with the vat. The vibrating plate is also provided with a suitable surface for the band or tube. The band, or tube, is inserted between the vibrating plate and the flange or rim, and having a certain amount of initial compression when the vibrating plate is farthest from the strainer plate, will assume an elliptical form, and thus keep the joint tight. When the vibrating plate is nearest to the strainer plate, the band or tube will be still further compressed. It is claimed that this form of joint is suitable for other forms of strainers.

In addition to the method above described, the arrangement may be reversed, that is, the rim or flange fixed to or in one piece with the vat may be on the underside of the tube, or have the tube resting on it, and the surface on which the tube rests may be recessed or plain. The vibrating plate will therefore rest or bear on the tube, and may have the surface in contact with the tube plain or recessed. The vibrating plate may be in more than one piece, to facilitate the insertion of the tube in position. In this arrangement the band or tube should be slightly compressed when the vibrating plate is nearest to the strainer plate, or at its top position, and will be still further compressed the further it is removed from this position, or at its lowest position. Referring to the drawings, A is the vat, B strainer plate, C vibrating plate, C^1 disconnectable part of vibrating plate, D flange of vat, E guide bracket for vibrating rod F, H tube. Fig. 1 sectional elevation, Fig. 2 part plan of vat with strainer plate removed.

Fig 1

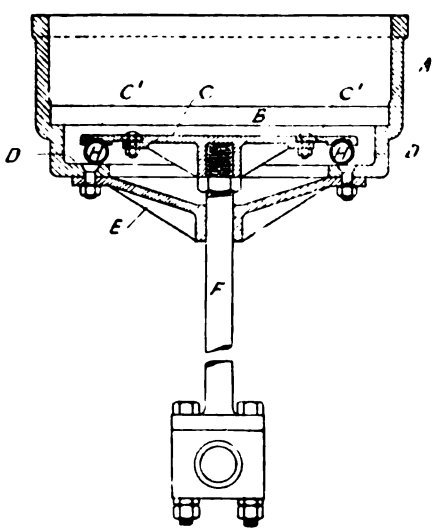
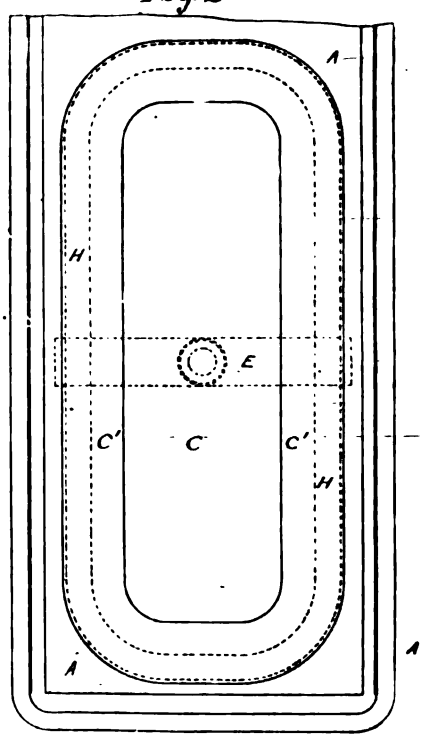


Fig 2



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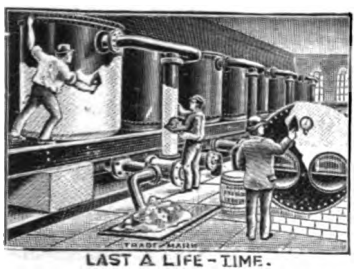

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American Imports & Exports of Paper

The Government returns of the imports and exports of paper for February have just been issued. The imports for February of this year, as compared with a year ago, show a slight increase, and are as follows:—

	1897.	1898.
United Kingdom	$49,656	$45,776
Belgium	4,381	6,519
France	12,619	21,214
Germany	112,748	125,331
Other Europe	3,966	5,964
Japan	13,406	12,397
Other countries	1,322	2,010
	$198,098	$219,211

For the eight months ended February, 1898, there was a slight decrease of imports, as compared with the corresponding eight months of 1897. The figures are as follows:

	1897.	1898.
United Kingdom	$371,713	$337,415
Belgium	43,066	38,079
France	120,430	152,072
Germany	1,214,705	1,180,535
Other Europe	34,113	35,585
Japan	130,303	117,862
Other countries	17,353	22,962
	$1,931,773	$1,884,510

When, however, one examines the returns of exports of paper, a very heavy increase is found, both for the corresponding month and eight months of last year. The exports for the month of February were as follows:

	1897.	1898.
Paper hangings	$16,299	$27,320
Printing paper	*a*	218,898
Writing paper and envelopes	6,029	13,733
All other	211,677	201,522
	$234,005	$461,473

The exports of paper for the eight months ended February, 1897 and 1898, were as follows:—

	1897.	1898.
Paper hangings	$54,434	$114,718
Printing paper	*a*	1,829,994
Writing paper and envelopes	65,894	117,743
All other	1,788,780	1,526,139
	$1,909,108	$3,588,594

a Not stated separately prior to July, 1897.

Paper Testing.

The paper testing office of Herr Otto Winckler, in Leipzig, has sent out its annual report, from which we learn that last year 829 tests were required, of which 412 came from manufacturers, 286 from consumers, and 131 from dealers. There were 327 microscopic tests made (26 quantitatively). Ashes were examined in 317, efficiency of size in 298, toughness and elasticity in 281, rubbing and crumpling in 280, wood pulp in 250 cases. Most of the enquiries came from Germany, but there were also some from Austria, Great Britain, Switzerland, Russia, Belgium, Holland, Italy and France. Also a legal decision was called for in a case where Mr. Winckler acted as expert. Questions are now frequently asked, particularly by public bodies, as to which of a certain number of qualities would be most suitable for a certain purpose. Even private firms often call for such tests, or publishers before printing a book. The book trade was interested in 153 tests. Most of these referred to the question whether deliveries were up to sample. Sometimes the correspondent wanted to know whether a paper would perhaps discolour. As the office has, in devising the printed question formulas, considered the book trade very specially, it is only natural that enquiries from that quarter are greatly on the increase. Some special cases are perhaps interesting. A blue oil tracing paper had shown yellow margins, and it was found that oxidation of the oil with which the paper was impregnated was the cause. Various tests were made with filters. Tests of copying papers were made with the object of finding what connection there was between the fibre and the copying power. There is a certain resemblance between copying and blotting paper, only that the fibre of the former must be finer, and that the finer the fibre the better and sharper is the copy. Linen and hemp or cotton fibre are far superior to straw or jute. Raw paper for surface and chromo papers was examined to see whether it contained anything injurious to the chromo process. Paper mills submitted several important questions in the manufacturing process. A great many faults and shortcomings in the papermaking process were investigated, and advice given as to how difficulties might be avoided. Raw materials were also tested. In two cases postage stamps were submitted in order to ascertain whether they were genuine, which was proved in one case, the other being a forgery.

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
A B..	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba.	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C..	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D..	71	28	730	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E..	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F..	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G..	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H..	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I..	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z..	210	82½	—	—		4,900	245	0	500	25	0	200	10	0		—	

Prices are understood for delivery at my works — Leipzig — and include 2 knives of best quality, 2 cutting sticks, spanner and oil can.

Packing cases extra.

For quotation — delivery free domicile — please apply direct to my sole agents:

Messrs. KAMPE & CO., 76 High Holborn, LONDON W.C.

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Yellow Prussiates of Potash and Soda.

PRUSSIAN BLUE

PASTE. LUMP. POWDER.

Aniline Oil and Salt.

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The VEREINIGTE STROHSTOFF-FABRIKEN (Dresden)
United Straw Pulp Manufacturing Co., Limited.
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Recommend their First-class Bleached Dry STRAW PULP, Brands V.S.T. and V.S.R. Unequalled in Whiteness and Purity. Strong and Felty. Warranted free from clays and colours. Used by Leading Paper Mills in Europe and U.S.A. *For Samples, &c., please apply to the Sole Agents:*

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England (except Newcastle District): CHRISTOPHERSEN, ANDREWS & Co., 91, QUEEN VICTORIA ST., LONDON, E.C.
United States: H. O. BATEMAN, 6, SEEKMAN STREET, Room 311, NEW YORK.

2388

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Tariff Changes.

RUSSIA.

NOTE.—Poud = 36 lbs. avoirdupois; gold rouble = 100 copecks = 3s. 2d.

A despatch has been received at the Foreign Office from H.M. Ambassador at St. Petersburg, reporting that the Department of Customs notifies that price lists with printed designs bearing inscriptions under or about them, but without any text having independent meaning, are to be cleared under Section 177, point 6. Duty, Rs. 8·75, gold, per poud.

UNITED STATES.

Binders' twine is dutiable at the rate of 45 per cent. *ad valorem* under paragraph 347 of the Act of 1897 as manufactures of hemp not specially provided for.

ST. LUCIA.

According to a Customs Ordinance of this West Indian Colony, the following addition has been made to the Table of Exemptions from duty in the second schedule to the said Ordinance:

"All receipt books, bill heads, and forms imported into the Colony by the West India and Panama Telegraph Company, Ltd."

NEW CHILIAN CUSTOMS TARIFF.

The following is a statement of some of the duties leviable under the New Customs Tariff of Chili. It has to be noted, however, that a new tariff of values, in conjunction with which these percentage duties will have to be read, is in course of preparation by the Chilian Government.

Article 1.—All products or merchandise from foreign countries shall pay on being taken out of the Custom House for home consumption an import duty of 25 per cent. *ad valorem*, with the exception of those which shall pay 60, 35, 15, and 5 per cent.; of those which shall pay specific duties; and of those which shall be admitted free as hereinafter mentioned.

Article 2.—The following articles shall pay the exceptional duty of 60 per cent:—

Articles of whatsoever material, printed, lithographed, or engraved, with or without pictures, with the exception of books, periodicals, and newspapers.

Articles made of cardboard or paper.

Playing-cards.

Labels and printed wrappers for bottles and other uses.

Account books, with or without printed lines.

Article 3.—The following shall pay 35 per cent.:—

Books, printed, with covers of tortoiseshell, mother-o'-pearl, ivory or their imitations, or that are ornamented with pieces of gold or silver, or with silvered or gilt metal.

Cigarette paper.

Paper hangings, gilt or silvered, burnt in, and imitation leather.

Article 4.—The following articles shall pay 15 per cent.:—

Paper for artificial flowers.

Article 5.—The following shall pay 5 per cent.:—

Paper, marbled, etc., for bookbinders.

Article 6.—The following shall pay special duties:—

Millboards, ordinary, 15 cents per kilogramme.

Paper, blotting, brown and ordinary wrapping, 15 cents per kilogramme.

Article 7.—The following shall be admitted duty free:—

Charts, geographical, celestial, or typographical, plans, models, designs, and patterns.

Printing plant and materials, not including those of wood.

Ingredients and special dyes for woollen factories and paper mills.

Books, printed (excepting those subject to 35 per cent.), trade catalogues, reviews, and all other periodical or daily publications.

Copy books, writing, drawing, and all sciences and arts.

Paper, unsized or half-sized for printing, and rolls of paper for telegraphic impressions.

Paper sheathing for vessels.

Pulp, mechanical and chemical, for the manufacture of paper.

Ink, printing and lithographic.

Rags for the manufacture of paper.

A PROCESS relating to "an improved writing paper and ink therefore" has been recently patented by Messrs. Fred. Cox, Fritz Kornacher and Marcus Brumm. To prevent sedimentary deposits of ink in ink bottles and on nibs, and also to prevent the soiling of the hands, the floor, etc., by ink, is the object stated in this specification, which is mainly attained by distributing the component parts of the ink in the paper, as well as in the inky fluid. The paper is manufactured in the usual way, and during the manufacture a certain quantity of tannic acid, or by preference gallic acid, and prussiate of potash or the like is added thereto. In order to write on this paper a weak solution of vanadate of ammonia, iron salts, or the like, which give a strong colour when combined with the substances incorporated in the paper, and also form insoluble solutions therewith.

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"SALAMANDER"

THE UNITED ASBESTOS COMPANY LIMITED · LONDON · INDESTRUCTIBLE

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Novel Application of Asbestos in Embossed Wall Decorations. Designs by Leading Artists. Capable of infinite variety of decorative treatment. Fireproof.

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Commercial Intelligence.

Re THOMAS JAMES DEWICK, Printer and Stationer.

This debtor until recently carried on business at 46, Barbican, E.C., under the style of Dewick and Co. He filed his own petition on April 5th, and the first meeting of the creditors was held on April 22nd, before Mr. E. Leadam Hough, official receiver, at the London Bankruptcy Court. It appeared that he was formerly in partnership with Mr. Frederick William Bateman, the style of the firm being Dewick and Bateman, but that partnership was dissolved in 1893, when a deed of assignment was executed in favour of Mr. Francis Nicholls, chartered accountant, Old Jewry-chambers, acting as trustee for the benefit of the creditors. The trustee carried on the business until May, 1894, when the debtor agreed to repurchase it for a sum sufficient to pay a dividend of 10s. in the £ to the creditors and certain expenses. He subsequently carried on the business as Dewick and Co. Payment was to be made by instalment, and in consequence of default of one instalment the business was in October last sold by the trustee to Messrs. Ripley and Co., who have since employed the debtor as their traveller at a weekly salary. A private meeting of the creditors was held on the 1st April, as the result of which the debtor filed his petition. He attributes his failure to the high rate of interest (10 per cent.) charged on borrowed money, and to loss on the trading through insufficient turnover. Having called over the proofs, the Chairman read out the above particulars, and added that the statement of affairs had only just been filed, so that it had yet to be examined, and the figures had to be taken subject to any amendment that might be necessary. The debtor returned his assets at £824 10s., from which had to be deducted £42 for the preferential claims, leaving £782 against the ranking liabilities, returned at £1,267, or a deficiency of £485. The assets comprised stock-in-trade, estimated to produce £514. The cost price was only £571, so that only a small percentage had been allowed for realisation. Then there were machinery, trade fixtures and fittings, estimated to produce £75, and book debts valued at £92. The lease of the business premises was charged, but a surplus of £125 was anticipated, and a balance of £17 was expected to come from certain goods in the hands of other persons. A discussion ensued as to the sale by the trustee to Messrs. Ripley and Co., who were represented at the meeting by Messrs. Fowler, Perks and Co. In the course, thereof, the debtor said the sale did not include the assets of Dewick and Co., but only those of the old business. The trustee sold first to Mr. Bowen at his (debtor's) request, the idea being that Mr. Bowen would find him the money with which to carry on the business. Subsequently, however, Mr. Bowen declined to carry through the arrangement, and introduced Messrs. Ripley and Co. as the purchasers. The latter claimed to have purchased everything on the premises, but the trustee, on the other hand, could only sell the assets remaining of the estate of Dewick and Bateman, over which alone he had charge. Mr. Fowler said his clients were prepared to hand over any goods on the premises to which they were not entitled. No question arose regarding any claim by the debtor until four months after the sale had been completed, and Messrs. Ripley and Co. thought that everything had passed into their possession. Considerable confusion had arisen, and the goods belonging to Mr. Dewick would have to be identified, but his clients would render every assistance to get the matter settled amicably. The Chairman said the point in dispute would have to be dealt with by the trustee to be elected at that meeting. The debtor was unable to make an offer, consequently the estate must be administered in the usual course of bankruptcy. Mr. Kimber moved that the case be left in the hands of the official receiver, and that course was unanimously agreed to, no committee of inspection being deemed necessary. The debtor was directed to attend the Court on May 18th for public examination. Mr. A. J. Houlden attended the meeting on the debtor's behalf. Appended is a list of the principal creditors, viz. :—

UNSECURED.

Backhouse and Coppock, London	£25
Byrne and Co., London	23
Barker and Smith, London	31
Chipperfield and Messent, London	12
Rev. A. W. Dewick, London	277
Joseph Dewick, London	130
Fourdrinier, Hunt and Co., London	11
Garstin and Co., London	12
H. Grosvenor, London	15
Gorringe and Co., London	21
Harrild and Son, London	18
Hughes and Kimber, London	59
Herring, Dewick and Co., London	80
A. L. Houlder, London	100
J. Jaunsey, London	10
Joseph Leader, London	53
Manning and Son, London	19
* Norman and Bowen, London	144
E. Reichman, London	15
A. Smart, London	40
Webster and Co., London	21
T. Harvey, London	10

* The debtor appends the following note, viz. :—With reference to the amount credited to Messrs. Norman and Bowen, as above, a charge dated 20th October, 1897, for £120, was given by me to Mr. Frank G. Bowen upon certain book debts extracted from my ledger by Mr. Kimber (the amounts of which I have had no opportunity of checking) which I have ignored, as it appears to me to be informal and an undue preference.

FULLY SECURED.

John Brand and Co., London (Security valued at same amount).	92
General Life Assurance Co., London (Security valued at same amount).	26
New Imperial Building Society, London (Security valued at £276).	151
Ripley and Co., London (Security valued at same amount).	103

PREFERENTIAL.

M. Pigott, rent	12
J. B. Tylor, rent	17
Rates, taxes, and wages	12

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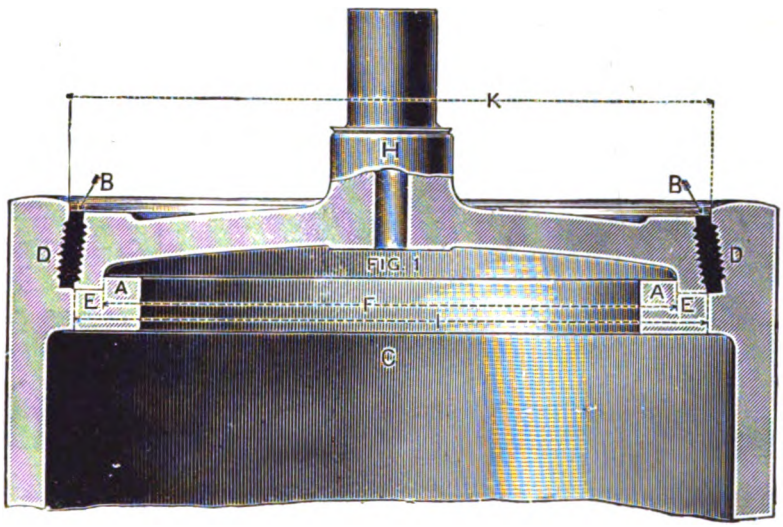
Leith Walk Foundry,

ESTABLISHED 1845. **EDINBURGH.**



WHITE'S Patent DRYING CYLINDER.

The ends and manhole cover fixed without through going bolts. An absolutely steam tight joint is ensured, leakage being impossible. Over 300 of the Cylinders have already been made giving entire satisfaction.

WHITE'S Patent OSCILLATING STRAINER,

is the best and most efficient in the market. Over 250 of these are now at work with great success.

☛ *FULL PARTICULARS ON APPLICATION* ☚

TELEGRAMS: "BERTRAM, LEITH."

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CROOKES, ROBERTS & Co.,

Argus Works,

SHEFFIELD.

Telegrams: "Argus, Sheffield."

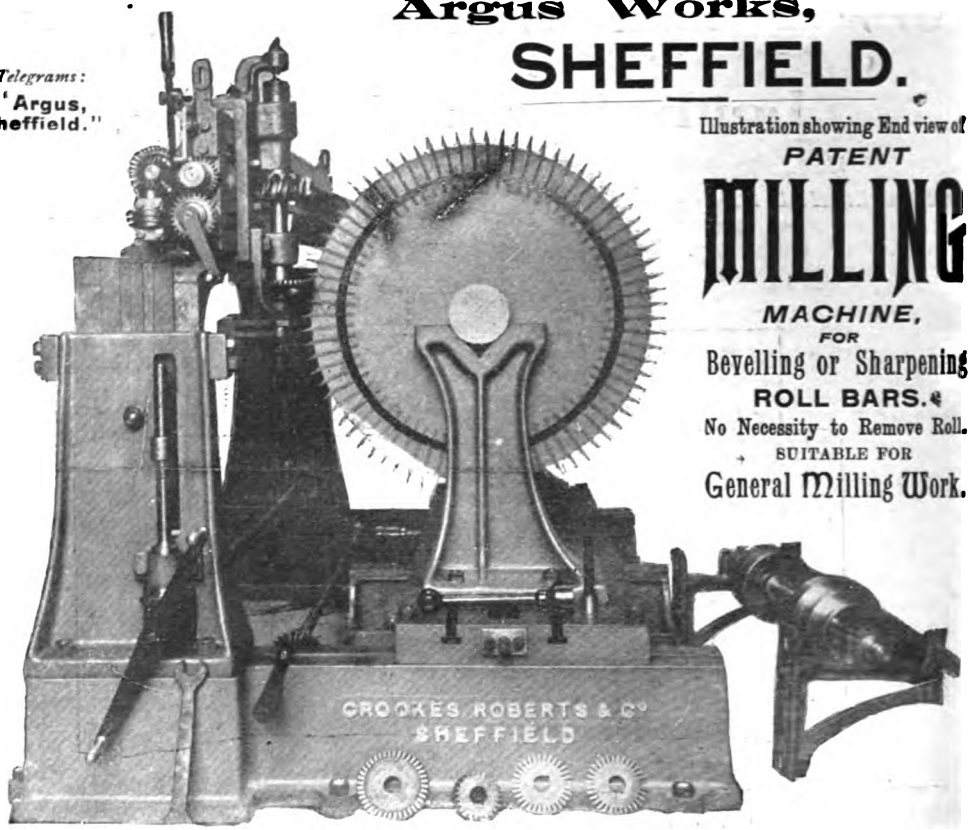


Illustration showing End view of

PATENT

MILLING

MACHINE,

FOR

Bevelling or Sharpening ROLL BARS.

No Necessity to Remove Roll.

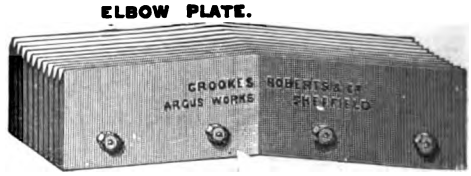
SUITABLE FOR

General Milling Work.

RAG ENGINE ROLL BARS AND BED PLATES

In Special Bronze Composition, Q. I. BB Best Refined Crucible Cast Steel, Refined Crucible Cast Steel and Selected Bessemer Steel.

ELBOW PLATE.



CIRCULAR KNIVES,

RAG & ROPE CHOPPER KNIVES,

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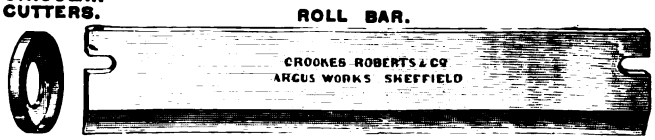
GUILLOTINE and all other **MACHINE KNIVES.**

STEAM HAMMERS

Specially adapted for Re-drawing Roll Bars.

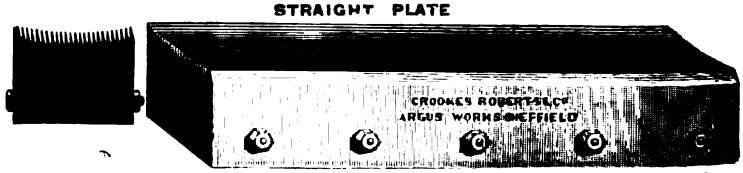
CIRCULAR CUTTERS.

ROLL BAR.



CIRCULAR CUTTERS.

STRAIGHT PLATE



EVERY DESCRIPTION OF TOOLS USED BY PAPERMAKERS.

Printed and Published by W. JOHN STONHILL, 58, Shoe Lane, LONDON, E.C. May 6, 1898.

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The World's Paper Trade Review

A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 19. LONDON: MAY 13, 1898. EVERY FRIDAY. PRICE SIXPENCE.

The Papermakers' Field.

Why Not a Paper for Butchers' Use?

HINTS ABOUT COPYING PAPER.

It is only within the last few years that butter men have had a specially prepared grease-proof paper for wrapping up butter in. Previous to this introduction the butter man contented himself with wrapping up his "best Dorset" in scraps of old newspaper or other printed paper which he bought off the marine store dealer. Not a nice thing to think of, certainly, and yet the same unsatisfactory means of wrapping up meat is adopted by every butcher in the kingdom. There is an opening here for some enterprising papermaker to produce a special line suited for butchers. The profits made by the butcher are reputably large, and therefore he is capable of paying a fair price for a good and suitable article.

Another line in which there is an opening is in letter copying book paper. The majority of the paper on the market now is not homogeneous enough. This fact, coupled with that of most copying ink being too ready to spread and blur the paper, renders the letter copying book now in use a very unsatisfactory article. What is wanted is a kind of paper which would, by chemical action on the ink, take a "chemicograph" of same. The everyday letter copying book depends for its action on the fact of its being semi-transparent and ready to practically absorb some of the ink which has been used in writing with. At the most, however, but a poor, ill-defined, blurred, or smudged copy is obtained, and by means which are a positive disgrace to the present age of labour-saving methods and processes. If the paper was so prepared (either by chemicals mixed with the paper pulp, or by treatment with chemicals after being made into sheets) as to take a *facsimile* copy of the writing when the paper comes in contact with same, then all the trouble and mess of watertrough, brush and copying press would be dispensed with. As the majority of inks depend for their colour on salts of copper or iron, it would be an easy matter to impregnate paper pulp with ferrocyanide of potassium, whereby, when such paper comes in contact with an ink containing an iron or copper salt a *facsimile* of the ink would be imprinted on the paper in indelible lines of a ferrocyannide of iron (blue), or of copper (brown). Another improvement that is needed in this class of paper is to have its texture more homogeneous. If the paper were made more translucent it would be more conducive to reading the copied writing.

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British Imports of Foreign Paper.

UNPRINTED.

COUNTRY.	APRIL. 1896.	APRIL. 1897.	APRIL. 1898.	JAN.-APRIL. 1896.	JAN.-APRIL. 1897.	JAN.-APRIL. 1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Sweden	32,144	40,505	42,511	152,917	162,472	167,034
Germany...	39,960	43,937	31,560	165,774	156,250	125,677
Holland	47,010	44,453	41,788	192,122	182,132	158,885
Belgium	19,258	23,006	23,647	78,657	83,508	79,856
Various	50,724	96,771	98,562	212,817	322,900	473,284
TOTALS	189,096	248,672	234,068	802,287	907,263	1,004,736
VALUE.	£	£	£	£	£	£
Sweden	23,994	29,952	29,182	119,278	114,148	122,784
Germany...	36,859	42,884	27,527	152,045	150,276	113,434
Holland	34,292	33,342	37,371	143,548	145,190	142,837
Belgium	24,277	27,466	30,872	101,565	98,258	101,151
Various	52,627	83,371	89,216	235,125	276,144	373,974
TOTALS	£172,049	£217,015	£205,168	£751,561	£784,016	£854,180

PRINTED.

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Germany...	1,005	989	1,819	3,646	2,916	5,145
Holland	1,879	1,313	1,085	6,203	6,041	4,834
Belgium	4,404	2,922	831	12,983	14,153	10,392
France	1,047	886	849	3,277	3,931	3,786
Various	946	651	1,566	3,820	4,665	8,902
TOTALS	9,881	6,761	6,150	29,929	31,706	33,059
VALUE.	£	£	£	£	£	£
Germany...	4,220	2,644	3,700	10,784	8,898	12,512
Holland	7,888	5,070	4,525	22,654	20,114	20,129
Belgium	12,657	8,127	2,814	35,716	39,591	29,502
France	5,919	5,190	4,806	18,592	22,032	18,919
Various	2,473	1,881	4,432	11,392	11,865	20,147
TOTALS	£33,157	£22,912	£20,277	£99,138	£102,500	£101,209

STRAW, MILL, & WOOD PULP BOARDS.

Quantity—cwts. ...	109,215	173,713	136,624	472,527	527,972	573,357
Value	£42,011	£59,629	£53,177	£167,095	£185,273	£214,900

TOTALS.

April	1898	380,842 cwts	£278,622	Jan.-April	1898	1,611,152 cwts	£1,170,349
,,	1897	429,146 ,,	299,556	,,	1897	1,466,940 ,,	1,071,789
,,	1896	308,192 ,,	247,217	,,	1896	1,304,743 ,,	1,017,794

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ESTABLISHED · 1836 ·

Limited.

FERNHILL MILLS

BURY, LANCASHIRE.

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Exports of British Paper

PRINTINGS AND WRITINGS.

COUNTRY.	APRIL.			JAN.-APRIL.		
	1896.	1897.	1898.	1896.	1897.	1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	4,408	3,494	3,799	17,319	12,871	13,962
U. States	662	1,959	637	3,489	4,639	3,796
S. Africa	6,369	5,811	4,653	24,077	23,991	18,542
E. Indies	5,880	4,924	5,670	23,530	19,047	23,750
Australasia... ...	24,356	35,485	22,312	114,395	121,146	112,623
B. N. America ...	2,750	1,600	889	6,147	5,703	3,422
Various	11,402	13,118	12,120	47,834	43,616	40,116
TOTALS ...	55,827	66,421	50,071	236,781	231,013	225,211
VALUE.	£	£	£	£	£	£
France	6,660	6,265	6,017	27,332	21,666	23,844
U. States...	2,034	6,276	1,510	8,224	13,272	6,583
S. Africa	9,480	8,736	7,866	38,023	36,327	28,574
E. Indies	9,950	8,030	9,909	40,782	34,378	40,690
Australasia	34,153	45,345	29,869	142,310	148,745	130,493
B. N. America ...	4,556	2,734	1,543	10,374	9,463	6,565
Various	19,484	23,993	22,106	84,924	81,505	85,196
TOTALS	£86,317	£101,379	£78,820	£351,969	£345,356	£321,955

OTHER KINDS.

(Excluding Hangings).

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	937	745	1,109	4,214	3,542	3,434
U. States...	636	1,060	813	3,778	4,128	2,484
S. Africa	3,091	3,606	3,799	16,477	15,423	15,761
E. Indies	727	1,896	1,841	5,130	4,743	8,098
Australasia	7,565	10,184	6,745	34,673	36,216	27,561
B. N. America ...	309	409	491	1,397	1,085	1,337
Various	4,276	4,596	4,514	15,252	17,816	17,970
TOTALS	17,541	22,496	19,312	80,921	82,953	76,645
VALUE.	£	£	£	£	£	£
France	2,583	2,211	2,913	13,253	12,775	10,793
U. States	2,918	3,824	2,249	14,242	14,639	7,714
S. Africa	3,292	3,505	3,069	16,192	14,712	14,558
E. Indies	1,451	2,000	2,214	7,688	6,463	9,414
Australasia... ...	7,355	9,650	5,534	32,222	32,819	26,158
B. N. America ...	999	629	1,035	3,300	2,233	3,062
Various	7,414	8,617	7,794	29,087	30,175	30,112
TOTALS ...	£26,042	£30,436	£25,408	£115,984	£113,816	£101,811

TOTALS *(Including Hangings)*:

April,	1898	76,460 cwts	£119,553	Jan.-April	1898	332,929 cwts	£502,164
,,	1897	96,524 ,,	149,227	,,	1897	344,081 ,,	531,357
,,	1896	81,130 ,,	129,145	,,	1896	346,737 ,,	537,508

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PURE ALKALI

Crescent Brand B.M&C°, Trade Mark.

GUARANTEED 58 DEGREES,

Equal to 98 per Cent. Carbonate of Soda.

The STRONGEST and PUREST Form of the Article in the Market, and therefore the MOST ECONOMICAL for the Use of Papermakers, Printers, Bleachers, Wool Scourers, Dyers, Glass, and Soap Makers.

BICARBONATE OF SODA,

☛ REFINED and RECRYSTALLISED.
The PUREST and CHEAPEST in the Market.

SODA CRYSTALS

OF THE FINEST QUALITY.

Concentrated Crystal Soda

(Sesqui Carbonate)

By far the PUREST and CHEAPEST Form of Washing Soda. Only 1-lb. of Concentrated Crystal Soda required to do the Work of 2-lbs. of Washing Soda.

BRUNNER, MOND & CO., LTD.

NORTHWICH, CHESHIRE.

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SATINITE.

In "The Chemistry of Papermaking," the authors (Messrs. Griffin and Little) state "that the use of mineral fillers has come to have a recognised and legitimate place in papermaking, and the presence of such fillers in a sheet is not under ordinary circumstances to be regarded as evidence of adulteration. They are used quite as much for their beneficial effect upon the feel and finish of the paper as through a desire to lower the cost of production. Many of the best grades of paper could not be made at all without the use of some filler in considerable amount to give the smoothness of surface required to bring out the fine lines of process cuts."

A difficulty the papermaker has sometimes to contend with is the selection of a suitable loading material. There are so many materials, with fancy names, introduced from time to time, which are totally unfit for the requirements they claim to fulfil, and which in use, owing to coarse particles, etc., are likely to impair the value of the paper. The most salient points of a good filling material are colour and fineness, and consideration has also to be given to its specific gravity. For high grade papers it is essential that the filler used be free from grit, or else the calender rolls are likely to be marked, and if there is any presence of mica shiny specks are apparent in the finished product.

MR. C. H. AUSTIN,
General Manager and Salesman of the Satinite Co.

Amongst well-known materials which have been on the market for years and have an established reputation, may be mentioned satinite. This filling is guaranteed chemically pure and free from acid, and found to combine easily with other materials. Manufacturers of fine white paper find it to be especially white, clean, and free from grit, and to give a high degree of finish to the

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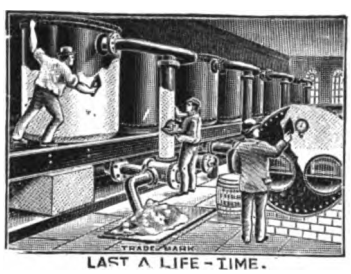
paper. Its use has grown extensively during recent years for all classes of paper, and the makers claim that by its introduction 20 to 30 per cent. of starch is saved.

Dr. Charles Augenot, Professor of Commercial Chemistry at the Auvers Institute of Commerce, is greatly impressed with the characteristics of satinite. In a report, he states, the "material does not lose its water or crystallisation on continued heating at 212 degrees Fahrenheit, and this loading retains the water when the paper is dried in the ordinary way on the drying cylinders. It gives such whiteness that less blue is required, and being a binder and stiffener, saves about 25 per cent. of starch." Amongst the various analyses made may be mentioned that of Messrs. Huson Bros., of Liverpool, who particularly dwell upon the purity of the material.

The test of time is an excellent criterion of the value of an article, and certainly the Satinite Co., of West Bank, Widnes, the makers of the material, have no room to complain of the lack of appreciation on the part of papermakers. Although satinite is very largely used in the production of the best grades of paper—throughout Great Britain and also on the Continent—it has been found highly advantageous to employ it in the commoner grades of paper. At the time the present company was formed—about five years ago—the output was only three tons a week. The proprietors made extensive alterations, increased the plant, improved the product, and were rewarded by finding a growing demand, the present weekly output being about 80 tons, giving employment to some 20 hands. Mr. James Carruthers is the works foreman, and it has been under his practical guidance that most of the improvements have been effected. At one time the company bought their casks ready made, but owing to the expansion of the business a staff of coopers is now employed. Mr. C. H. Austin, the general manager and salesman of the company, whose portrait we give, is well known in the paper trade, his urbanity of manner and promptitude and reliability in all business matters having gained him many friends. Mr. Austin, we may mention, is the agent for the Australian Alum Co., Runcorn. He was formerly manager for 19 years for Messrs. Pochin and Co., Ltd., at Bristol, leaving some eight years ago to give his attention to "Satinite."

WADE'S Patent Boiler-Covering Cements



LAST A LIFE-TIME.

For Covering Marine and Stationary Boilers, Water Heaters, Cylinders, Steam Pipes, Stills, Hot Liquor Tanks, Hot Water Pipes, Cisterns, Cold Water Pipes, &c.

Patentees of

WADE'S PATENT BOILER SCALE DISSOLVING FLUID

and ALL KINDS OF LUBRICANTS for Stauffer's and every description of Lubricators; also

WADE'S Patent Engine and Hydraulic Packings,

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Estimates Free. Agents Wanted.

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BRUCE'S PATENT FLAT STRAINER.

PAPERMAKING MACHINERY.

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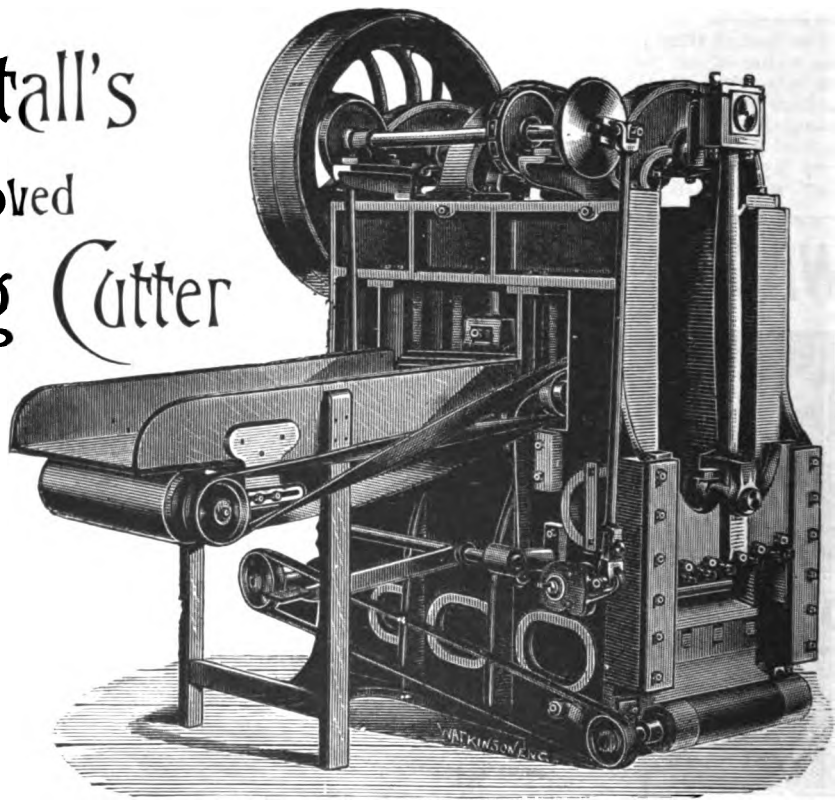
Papermakers

BURY, near

Nuttall's Improved Rag Cutter



This Machine has now been Greatly Strengthened and Simplified, and its Output Capacity Increased. It is Equally Effective upon the Strongest and Lightest Materials, and will Cut Every Class of Stock.

Sole British Makers of the

NO WELL EQUIPPED PAPER

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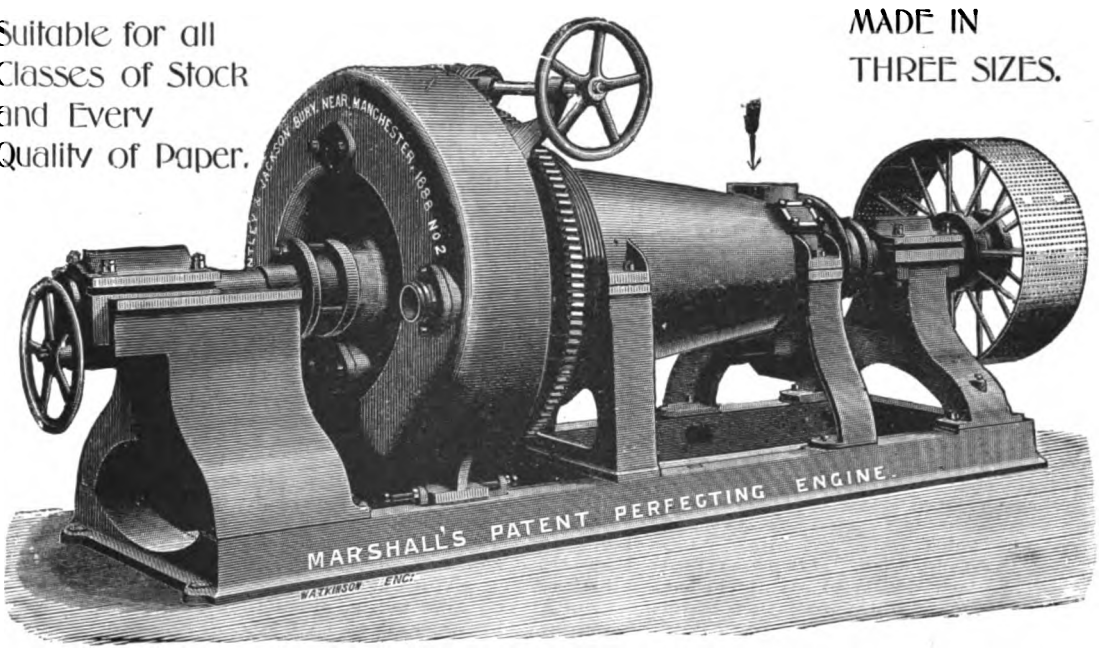
Engineers,

MANCHESTER.

Marshall's Patent Perfecting Engine

Suitable for all Classes of Stock and Every Quality of Paper.

MADE IN THREE SIZES.



This Engine will produce a Better Finished, Stronger, and More Even Sheet of Paper from the same Materials than can be produced by any other Mechanical Process, and at the same time will REDUCE the TIME and POWER Required for Beating.

COBURN-TAYLOR Machine.

ILL SHOULD BE WITHOUT.

ON APPLICATION.

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Enamelling Paper.

Amongt the various patents acquired by Pegamoid, Ltd., were some taken out in the name of Mr. F. G. Annison, described as a lithographic printer, of London. Mr. Annison, we understand, has lately been granted a further patent for "an improvement in box or enamelled papers, and the compound used to enamel the same."

The primary object of the invention is to produce an enamelled paper having a permanently waterproof coating intimately united with the paper or base that is tough and elastic, and has a superficial face that readily receives impressions of all kinds in the ordinary processes of printing, lithographing, etc. Such coatings, being non-absorbent, tough, and elastic, are not only durable, but are not subject to stretching and shrinkage when alternately exposed to moisture and drying, and are capable of receiving, without injury or impairment, any desired number of impressions, and, being intimately and tenaciously united to the base sheet, repeated applications of pressure thereupon do not produce lamination or separation, nor does the draft of the stone, plate, or type tend to produce "scabbing" or "peeling." Moreover, the coating of the enamelled papers is of such character that the inks and colours "cover" it more readily than the surfaces of ordinary enamelled papers, and hence to produce a given effect or body of colour upon the surfaces of the papers considerably less ink is required, and less pressure in impressing it upon the surface. This peculiar characteristic of the papers is, it is said, due to the fact that an exceedingly thin superficial absorbent surface is presented by a multitude of very fine particles of pigment, as hereinafter described, beyond which the inks and colours cannot penetrate because of the non-absorbent quality of the body of the coating.

There is first prepared a compound of nitrocellulose dissolved in camphor or its equivalent and wood alcohol, grain alcohol, or methylated spirit or their equivalents, and is in fact what is variously known as "celluloid," "xylonite," "ivorine," etc., in a fluid form. It is preferable to first mix the ingredients to about the consistency of ordinary putty, and then reduce by addition of alcohol or spirit to a liquid condition—for instance, to about the fluidity of olive oil at ordinary temperatures. Then add a large quantity (as compared with the nitrocellulose) of finely divided dry pigment of the colour desired, and grind the whole in an ordinary cone mill. During the grinding castor oil is added to increase the toughness and elasticity of the compound, or any oil producing the same or substantially the same results. This compound may be applied to the paper or base in the manner, and by the apparatus usually employed in making ordinary enamelled papers. The inventor has discovered that a compound of this character unites intimately with the paper base and takes a tenacious hold thereon. Successive coats may be applied until the desired thickness of coating has been built up, and each unites intimately with the one upon which it is superposed. Each coating should be dried before the next one is applied, and it is preferable to employ a drying temperature of from 125 degs. to 200 degs. Fahr. After the final coat the surface may be calendered by rolls heated from about 125 degs. to 200 degs. Fahr., and may then be embossed, if desired, by rolls having the same temperature, or calendering or embossing, or both, may be omitted. This compound of nitrocellulose insures an intimate union of the coating and the base, and even when as many as 15 pounds of some dry pigments per pound of nitrocellulose are employed the coating is waterproof and permanently retains this characteristic, as well as its toughness and elasticity, which are increased by the oil used in the compound. Surfaces of celluloid, xylonite, ivorine, etc., are not adapted to receive impressions from printing presses, lithographic stones, etc.; but the coating of this improved paper receives with facility, and retains all kinds of impressions of most, if not all, kinds of colours. The reason for this is that owing to the large amount of dry pigment employed an infinite number of minute particles of the pigment are exposed at the surface of the coating, and act to receive and retain printing inks and colours by whatever process applied. At the same time the nitrocellulose element of the compound renders the coating as a whole waterproof. The capacity for receiving and retaining impressions, if due to an absorptive character of the face, is superficial only.

The invention therefore contemplates that such quantity of dry pigment shall be used as not to overcome the binding quality of the nitrocellulose compound or destroy its waterproof character, and yet enough is to be used to obtain a face of such character as to receive and retain impressions printed thereon.

Some dry colours when ground up with the menstruum, as hereinbefore described, give more body than others, while the number of colours which may be employed is great. For example, hardly more than one-third as much ultramarine blue should be used to a given quantity of menstruum, as of French zinc white, since that blue is so much more absorbent that it calls for a much larger proportion of menstruum to bind it. The nature of the case, therefore, does not permit of a fixed quantitative rule applicable to all colours. The best general rule known has already been given, and it will be quite sufficient to enable one skilled in the art to practice the invention when aided by the specific examples hereinafter given and the general knowledge of the comparative characteristics of these colours acquired in the prior art; but if enough colour has been added to the menstruum to give the ordinary appearance of standard enamelled paper, but not so much but that the colour is firmly bound by the menstruum

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when dried, there is a waterproof, tough, elastic surface firmly attached to the paper, and which will well receive and retain impressions from the various inks and colours ordinarily used in printing on enamelled papers.

In practice the inventor has obtained satisfactory results when using the following proportions:—

Example 1.—For terra cotta surfaced paper, 13½ pounds French zinc white, 1 pound permanent brown, 1½ pound scarlet Turkey red, and 1½ pound dark yellow, ground in a menstruum composed of 1½ pound of nitrocellulose, 1½ pound of camphor, 3 gallons of alcohol, and 7 gills of castor oil.

Example 2.—For salmon-surfaced paper, 13½ pounds of French zinc white, ½½ths of an ounce of permanent brown, ½½ths of an ounce scarlet Turkey red, and 3 ounces of dark yellow, ground in a menstruum composed of 1 pound 2 ounces of nitrocellulose, 1 pound 2 ounces of camphor, 2 gallons and 1 pint of alcohol, and 6 gills of castor oil.

Example 3.—For white chromo-surfaced paper, 13½ pounds of French zinc white, ground in a menstruum composed of 1 pound nitrocellulose, 1 pound of camphor, 2 gallons of alcohol, and 6 gills of castor oil.

As stated, there may be applied either one, two, three, or more coats of the compound, according to the thickness of the coating desired. Preferably, however, each coating should be thin, so that the desired thickness may be obtained by successive coats. Upon any one of the earlier coloured coatings there may be applied a coating of the nitrocellulose compound, preferably containing oil but no pigment. The first coat or the second coat, if there be more than two, may be made less rich in pigment, the following coat or coats containing such quantity of pigment as to bring the surface up to the desired shade, and produce at the same time a character of surface adapted to receive impressions, as stated.

By calendering and brushing in the usual way the new papers may be given a highly polished surface, and with or without this treatment may also be beneficially employed as box papers and the like.

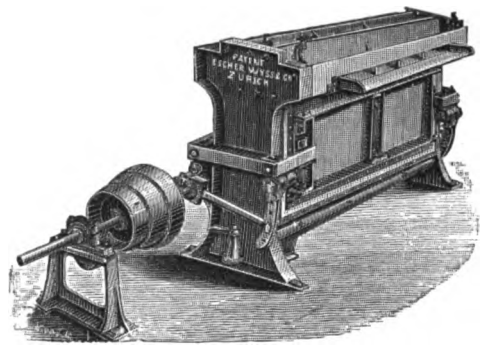
For the purposes of this description and the claims the inventor designates the amount of dry pigment used as in excess of the proportion of nitrocellulose compound, meaning thereby such quantity of pigment in relation to the quantity of the menstruum in which it is ground as will give a surface of the character described, but not so much as to overcome the binding quality of the nitrocellulose compound or destroy its waterproof character. A coating of this character readily receives all kinds of protective varnishes that may be applied to cover and protect the printed impressions, and if such a varnish be used he may employ what are known as "celluloid varnishes," which, as is well known, are very fluid solutions of celluloid and like compounds.

Though the primary object of the invention is to produce the enamelled paper of the character described, still as the described compound is believed to be novel, and as such a compound may be used in other relations than that hereinbefore described, and particularly where it is desired that surfaces of the compound shall receive printing and lithographic impressions, the compound *per se* constitutes a subsidiary feature of the invention.

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

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The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES—

SUPERIOR to any other System for its Numerous Advantages as:

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Little room taken up on the Machine, &c.

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LE GRAND & SUTCLIFF,

Hydraulic Engineers,

Magdala Works, Bunhill Row, London

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American Tariff Decisions.

The Board of United States General Appraisers has handed down the following decisions:—

4,872, 17,310.—Cigarette paper, from Braunstein Frères, Paris, January 18, 1898. Muslin tissue paper, 20 by 30, entered at 90 francs per 100 kilos. No advance. Add embossing, ·25 francs per ream.

17,400-17,435.—Copying paper, from James R. Compton and Brother, Manchester, February 8 and 23, 1898. 19 by 24 buff tissue, entered at 4s. 2d. per ream of 500 sheets. 21 by 24 buff tissue, entered at 4s. 7d. per ream of 500 sheets. 16 by 22 gauze tissue, entered at 3s. 2d. per ream of 500 sheets. 19 by 25 gauze tissue, entered at 4s. 4d. per ream of 500 sheets. 18 by 22 gauze tissue, entered at 3s. 7d. per ream of 500 sheets. 20 by 24 gauze tissue, entered at 4s. 4d. per ream of 500 sheets. 18 by 24 gauze tissue, entered at 3s. 11d. per ream of 500 sheets. 22½ by 27½ gauze tissue, entered at 5s. 7d. per ream of 500 sheets. Entered trade discount, 20 per cent., advanced to 8 per cent. trade discount. Deduct cartage, freight to Liverpool and putting on board.

17,669.—Parchment paper, from Knoeckel and Co., Lambrecht, February 28, 1898. White wood pulp paper, Com. 4,651, Thre. No. 309, entered at ·46, advanced to ·48 mark per kilo. Discount, 2½ per cent.; deduct inland freight.

519.—O. P., Detroit.—Printed matter, from Sun Life Assurance Company, of Montreal, Canada, March 10, 1898. One business book, entered at 1·50 dols., advanced to 2 dols.; 4 policy registers, entered at 3 dols., advanced to 4 dols. for all; 2,000 blotters, entered at 2·50 dols., advanced to 3·10 dols. for all; one advance payment book, entered at 1·25 dols., advanced to 1·50 dols.; one Agent's Progress, entered at 1·20 dol. advanced 1·70 dol.; Prosperuus and Progressive, entered at 15 cents, advanced to 17·50 cents for all; 10,000 announcements, entered at 27·50 cents, advanced to 38·50 cents for all. Further advanced by addition for case.

A decision has been handed down by the Board on classification of the United States General Appraisers on the protest of the Eastman Kodak Company against the collector at Rochester on an invoice of plain paper of fine texture, one surface of which has a high polish or glossy surface and mauve or pink tint. The goods were invoiced to the protestants by Steinbach and Co., of Malmedy, Germany, manufacturers of "photographic plain paper and albumen papers," and by the Coloured Paper and Glue Manufacturing Company, of Aschaffenburg, Germany, the invoice price being 2 marks per kilog., or 280 marks per 1,000 metres, less 3 per cent. discount, which is equal to about 20 cents per pound in United States currency. The goods in question were assessed for duty at 30 per cent. *ad valorem* under the provision in paragraph 398, act of July 24, 1897, for "albumenised or sensitised paper or paper otherwise surface coated for photographic purposes," but were claimed by the importers to be dutiable at 2½ cents per pound and 15 per cent. *ad valorem* under the provision in the same paragraph for "surface-coated papers not specially provided for in this act." It was admitted by the protestants that the merchandise is imported for photographic use, and that it is barytacoated, but their contention was to the effect that it has to undergo a process of sensitising before it is in condition for immediate use by the photographers, and, therefore, it is not a paper "coated for photographic purposes." The Board found that the merchandise in question is a superior quality of surface-coated paper, expressly designed and suitable for photographic purposes, and that it was known in commerce as surface-coated paper for photographic purposes on July 24, 1897, and for a long time prior thereto. The protests were therefore overruled.

The Manufacture of Esparto Pulp

ON THE SPOT.

In our issue of January 21st last we gave some particulars about an enterprise of this character which had been inaugurated at Sousse, in Tunisia, by M. Chas. Deiss, a local chemical expert. Since then the experiments have been going on smoothly enough, so much so that it is thought the old output of only 4 cwt. per day might safely be increased. Accordingly a Continental house has lately received an order to put down at Sousse a plant capable of making one ton daily. The mode of treatment adopted may be roughly described as follows: The grass is taken in its undried state, and a sufficient quantity (at present 4 cwt.) placed in the apparatus, where it is subjected to a pressure of 5 atmospheres (over 72 lbs. to the square inch), steam for which is furnished by a small boiler. After having been soaked in sea water, the grass is kept under pressure for 3 hours. This effects the proper separation of the fibres, which then have a second washing in sea water and subsequently a third, the liquid in the latter case being dialysed by a current of electricity. Then the pulp is packed in bags, dried in the sun, and is ready for the market. The 4 cwt. charge of grass produces about 270 lbs. of pulp, valued at 16s. per cwt. Another inventor, M. Kuess, of Tunis, is engaged in perfecting a new process for the production of this pulp, in which the electrical distillation of alcohol from esparto grass leaves a residue of excessively fine papermaking material. If anything comes of these rival schemes, the esparto industry of Tunis (which is already considered as practically a French possession), will, no doubt, "look up" in the near future.

NEW CHEMICAL WORKS IN THE UNITED STATES.—Work is being pushed forward on the building for the United Alkali Company, Bay City, Mich. It is to be 580 feet long and 85 feet wide.

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Wood Pulp

Sulphite,
Soda,
Mechanical.

SPECIALITY

FINEST QUALITIES OF

Mechanical Pulp.

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GERMANY.

THE WURTTEMBERG FACTORY INSPECTORS have issued a report dealing with accidents during the past year. After referring to the carelessness shown by many workpeople, it is pointed out that in the construction of new machines additional safeguards have been introduced. The telegraphic system for calling for help from ambulances, etc., has been still further improved. Stretchers and sanitary vans are kept ready in many stations, and rooms for receiving patients are kept in readiness.

THE POTATO PLANT has lately been experimented with in Germany for making millboards. The carriage is found too high, however, in proportion to the value of the plant.

PAPER PRICES IN GERMANY. — This question is still keenly discussed by German papermakers, and it is now proposed to raise the price for small lots. It is contended that if on all orders smaller than a certain quantity a good percentage were to be put on the price small consumers would cease to order from the mills but go to the dealers and the latter would keep the articles in stock by ordering them in larger quantities from the mills. Of the countries competing in Germany only Austria and Scandinavia have to be considered, and the import duty is a sufficient check.

UNITED STATES.

THE MOOSEHEAD PULP AND PAPER CO., Solon, Me., have commenced operations again. The mill has a capacity of 50 tons dry pulp. It was shut down thirteen months.

THE mill of the Burgess Sulphite Fibre Company, Berlin, N.H., now has its complement of digesters in operation, ten in all. The last digester installed is 47 feet high and 15 feet in diameter. Three other digesters are also 47 feet high, but only 14 feet in diameter, and the remaining six are 38 feet high and also 14 feet in diameter.

THE EXPORTS OF PAPER at New York according to the latest weekly list to hand included :— To London, 3,993 packages; Liverpool, 296 packages and 483 bundles; Southampton, 5 packages; Hull, 446 packages and 5 cases; Glasgow, 26 packages; Antwerp, 321 cases; Bremen, 1 case; Havre, 4 packages; Hamburg, 681 packages; and Rotterdam, 61 packages; B.W. Indies, 233 ges; Australasia, 28 packages; Brazil, ackages and 5 cases; Japan, 724 es; Mexico, 37 packages and 1 case; Zealand, 466 packages.

CANADA.

Now that the Canadian Government has decided to restrict the benefit of its preferential duties exclusively to the Mother Country and to such colonies as it chooses to favour, and since that preference changes on the 1st of July from a present discount of 12½ per cent., to one of 25 per cent. off regular tariff rates, some curiosity is felt as to the effect on Canada's paper trade. It is recognised that the change will facilitate the importation of British paper, but it is not apprehended that any more British news will be brought in. Certain fancy or special grades of paper are certain to be more largely imported from the United Kingdom. Touching this matter, an inquiry was made in the House a few days ago by Mr. E. F. Clarke, one of the representatives from Toronto. He asked if British paper manufactured from foreign pulp wood would be given the benefit of the preference quite as fully as British paper manufactured from wholly British or Canadian material. The Finance Minister replied that the paper would get the benefit of the discount if it was substantially the product of British industry.

COST OF SULPHITE PULP MILLS.—Mr. Thos. R. Allison, of Whitney, Ont., in urging the development of the wood pulp industry in Canada, writes :—"In New Brunswick a 30-ton mill can be built for 130,000 dols. There is a great demand for sulphite pulp in England; a first-class fibre will bring 50 dols. a ton, while the cost to manufacture in Canada is 20 dols. per ton, and freight to British port 5 dols. per ton.

AN increased demand by American paper mills for Canadian sulphite pulp is reported.

British Imports & Exports of Rags.

The imports of rags last month and also for the four months of this year show a decline compared with the corresponding period of 1897. The following are the

TOTAL IMPORTS.

April,	1898	1,639 tons	£16,832
,,	1897	1,873 ,,	19,801
,,	1896	1,739 ,,	15,757
Jan.-April,	1898	6,979 ,,	£67,930
,,	1897	8,559 ,,	86,718
,,	1896	7,825 ,,	72,780

A slight improvement is reported in the exports of rags last month compared with a year ago; the four months figures also show an advance :—

TOTAL EXPORTS.

pril	1898	4,557 tons	£24,221
	1897	4,432 ,,	25,988
,,	1896	4,012 ,,	22,312
Jan.-April,	1898	18,820 ,,	£91,250
,,	1897	16,516 ,,	89,590
,,	1896	17,907 ,,	99,007

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G. HARTMANN,

CHRISTIANIA, NORGE, Dronningens Gade 13.

TELEGRAFADR: HART, CHRISTIANIA. TELEFON: 72. RIGSTEL: 85.

Aktiebolaget G. HARTMANN'S Maskinaffär,

STOCKHOLM, SVERIGE, Vasagatan 5.

TELEGRAFADR: HART, STOCKHOLM. RIKS TELEFON: 1793. ALLM. TEL. 8309.

KONSULTERANDE INGENIÖR FÖR
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X

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PETER SPENCE & SONS, Manchester.
Alunkakor för Pappersfabriker.

JENSEN & GLAD, Köpenhamn.
Bornholms Kaolinlera.

NILS AALL, Ulefos, Skien.
Flusspat för Gjuterier.

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PETER SPENCE & SONS, Manchester.
Alumcakes for Papirfabrikker.

SCHÄFFER & BUDENBERG, Buckau-Magdeburg.
Dampkjedel- og Maskinarmatur.

REINICKE & JASPER, Cothen.
Knotenfangere, roterende og plane.

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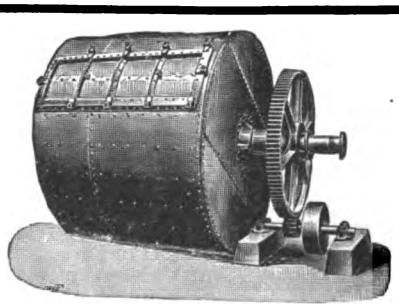
(BARKCLEANING CYLINDERS FOR PULPWOOD).

Apparater äro Levererade till Följande:

Franö Nya Aktiebolag ...	4
Lottefors Trämassefabrik...	1
Jössefors Aktiebolag ...	2
Brättne Trämassefabrik ...	1
Aktiebolaget Walkiakoski	1
Böhnsdalens Trämassefabrik	6
Embretsfos Sulfitfabrik ...	4
Hunsfos Fabriker	2
Tornator Trämassefabrik...	2
Hafslund Trämassefabrik...	1
Treschow-Fritzöes Fabrik	1
Sörfors Trämassefabrik ...	1
Lövenskiold Fossum ...	2
Drammenselvens Fabriker	1
Union Co.	2
Ranheim Fabrik	1



Foreign Applications Attended to by:

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Messrs. CHRISTOPHERSEN, ANDREWS & Co., 91, Queen Victoria Street, London, E.C.

United States:
Messrs. FREDERICK BERTUCH & Co., Temple Court Building, Room 308-10, New York.

Belgique & France:
Messrs. LAMMLETH & CORNET, Anvers.

Deutschland und Oesterreich:
H. FÜLLNER, Warmbrunn, Schlesien.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

THE British imports of wood pulp last month amounted to 33,059 tons, of the value of £151,395; for the corresponding period of 1897 the quantity received amounted to 25,610 tons, of the value of £131,091.

CHEMICAL wood pulp was received last month to the extent of 14,619 tons, of the value of £97,240. Of this quantity Norway supplied 7,921 tons, of the value of £48,833, and other countries 6,698 tons, of the value of £48,407.

MECHANICAL wood pulp was imported into Great Britain last month to the extent of 18,440 tons, of the value of £54,155. Of this quantity 7,763 tons, of the value of £20,164 were supplied by Norway, and 10,677 tons, of the value of £33,991 by other countries.

THE total quantity of wood pulp received from Norway last month amounted to 15,684 tons, against 16,890 tons for the corresponding period of last year, a decline of 7 per cent. From other countries the quantity amounted to 17,375 tons, against 8,720 tons, an increase of 99 per cent.

DURING the first four months of this year 122,424 tons of wood pulp were imported into Great Britain, the value being £584,589. For the corresponding period of last year the quantity was 114,129 tons, of the value of £562,676.

THE four months' imports of chemical woop pulp totalled up to 50,108 tons, of the value of £353,643. Norway supplied 27,753 tons, of the value of £181,018, and other countries 22,355 tons, of the value of £172,625.

MECHANICAL wood pulp was imported during the first four months of this year to the extent of 72,316 tons, of the value of £230,946. Norway supplied 42,604 tons, of the value of £109,508, and other countries 29,712 tons, of the value of £121,438.

TAKING the four months' figures the average price per ton of chemical pulp received from Norway is £6 10s. 5d., and from other countries £7 14s. 9d.

MECHANICAL wood pulp from Norway, taking the four months' figures, averages £2 11s. 4d. per ton, and from other countries £4 1s. 8d. per ton.

THE "Glendevon" has lately arrived at Manchester with 43,740 bales of wood pulp from Bangor. This is the sixth steamer that has loaded pulp from the mill of the Eastern Manufacturing Co., South Brewer, Me., for Manchester since June last.

THE price of immediate supplies of sulphur in the United States has advanced 5 dols. per ton. The price is now 25 dols. a ton for best unmixed seconds on spot. A scarcity is reported.

ABOUT 120,000 tons of sulphur appear to be the average yearly consumption in the United States.

AMERICAN manufacturers of sulphite are afraid of supplies being interrupted, owing to the war troubles.

IMPORTS are chiefly from the Sicily mines. The English recovered sulphur is much higher priced, and there is not enough, it is contended, to supply the American demand. Both kinds are controlled by the Anglo-Sicilian Sulphur Company, which enjoys a monopoly of the business and is in a position to dictate any kind of a fancy price.

THERE is a little sulphur mined in the United States out in Arizona, and in the neighbourhood of New Orleans, but the Standard Oil Company has the call on every ton. Then, too, the excessive freight rates render it impossible to ship sulphur from points in the West to mills in New England.

ACCORDING to Mr. L. M. Bickford, purchasing agent for the International Paper Company, the mills in the combination have a forty-five-days' supply on hand. He is hopeful that shipments will be got in. He is inclined to believe that English recovered sulphur, on a basis of 24 dols., is as good as Sicily seconds at 22·50 dols.

THE stiffening of the sulphur market has already had its effect upon the price of American sulphite. Unbleached has advanced to 42·10 dols. at 45, with bleached at 50 dols. to 55.

WE learn that the Italian Government has telegraphed to the prefects of Sicily that Spain has officially declared, by means of a circular, to the commanders of her war vessels, that brimstone is not to be considered contraband of war.

AN advice from Montreal, dated May 9th, states that every pound of sulphur now in Montreal has been bought up for shipment to the United States. The Collector of Customs will not interfere with these shipments, as declarations have been made that the sulphur is intended for paper manufacturers.

ONE firm alone in Montreal has contracted to supply 10,000 tons, already secured in Europe, *via* Canada, owing to the danger of capture if consignments were shipped to United States ports.

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Alkali and Bleach.

The following statistics, taken from the official returns, show the quantity and value of alkali and bleaching materials shipped to the countries mentioned for the month of April and for January-April, 1898, as compared with 1897 :—

ALKALI.

COUNTRY.	APRIL.		JAN.-APRIL.	
	1897.	1898.	1897.	1898.
Quantity ...	Cwts.	Cwts.	Cwts.	Cwts.
Russia	9,079	9,805	33,898	32 124
Sweden & Norway	7,274	13,543	17,704	38,924
Germany	15,344	12,940	41,515	49,919
Holland	9,027	7,024	35,540	36,943
France	5,561	4,686	18,927	20,001
Spain & Canaries...	22,250	13,999	100,530	103,209
Italy...	18,173	21,379	71,041	82,848
United States ...	258,963	93,851	845,041	374,631
Australasia ...	20,684	9,206	65,865	60,212
B. N. America ...	11,765	21,564	28,469	42,315
Other Countries ...	99,446	89,961	350,998	425,549
Totals ...	477,566	297,958	1,609,828	1,264,875
Value	£	£	£	£
Russia	2,713	3,059	9 512	9,945
Sweden & Norway	1,356	2,751	3,329	7 962
Germany	4,326	3,275	10,967	11,369
Holland	1,535	1,616	7,369	7,648
France	1,953	1,553	6,714	6 977
Spain & Canaries...	7.223	4,608	33,129	34,633
Italy...	5,283	6,774	21,006	25,199
United States ...	65,081	16,133	194,438	71,699
Australasia... ...	6,042	2,927	18,859	18,535
B. N. America ...	3,667	6,042	8,189	11,558
Other Countries ...	26,670	26,279	95,880	121,833
Totals ...	125,849	75,017	409,392	327,358

BLEACHING POWDER, &c.

Quantity	Cwts.	Cwts.	Cwts.	Cwts.
United States ...	57,397	62,298	223,771	245,969
Other Countries ...	30,787	31,511	119,436	110,063
Totals ...	88,184	97,809	343,207	356,032
Value ...	£	£	£	£
United States ...	18,335	18,299	71,687	69,315
Other Countries ...	9,741	9,651	39,207	34,773
Totals ...	28,076	27,950	110,894	104,088

THE WORLD'S PAPER TRADE REVIEW.

Continental Opinion of the WORLD'S PAPER TRADE REVIEW : "I take this opportunity to speak out that your Journal has NO EQUAL of its kind in all countries.—I remain, yours faithfully, M. BEHREND. Prince Bismarck's Paper Mill, Varzin, Germany.

THE WORLD'S PAPER TRADE REVIEW, the leading European exponent of the paper trade.—*American Paper Trade and Wood Pulp News*

PEME.BROKSHIRE.

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THE LEASEHOLD PROPERTY,

known as

The Prendergast Paper Mills,

together with a

DWELLING HOUSE,

Garden and Out-premises, Orchard and Hayguard, also a Field adjoining containing 4 a. 1 r. 30. p., all held under a Lease for 21 years dated 20th August, 1894, at a Rent of £80 per annum free of tithe. The said Lease contains a clause enabling the Lessee to purchase the Freehold for the sum of £1,000.

The Mills contain all the requisite Machinery for Paper-making, and there is a plentiful supply of water from the River Cleddaw.

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PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

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Situations Wanted.

AS TOWN TRAVELLER.—Wanted by a paper mill manager of great experience a position as Traveller with wholesale stationer, agent, or to represent a mill. Practical knowledge of all classes of white and coloured papers. Active business habits; good references; age 40.—Address, 7,277, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7277

FOREMAN desires Situation, thoroughly experienced in the making of tub-sized writings, E.S. writings, printings and news; first-class references.—Address, No. 7,266, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7266

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

MANAGER now open to Re-engagement; 15 years' experience as such in first class mills. Good papermaker, with thorough knowlege of rags, esparto, and wood pulps; experience of limited companies, and used to entire control. Active and energetic; age 42; good references.—Address, No. 7,278. Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7278

TO PAPER MANUFACTURERS and Others.—The Advertiser, who is a practical Papermaker of many years' standing, and is well known in the trade, is wishing to meet with a gentleman to join him in taking a paper mill for the manufacture of fine news and printings from esparto and other raw fibres, and for which papers he has an extensive connection.—Address in the first instance to A.Z., No. 7,269, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7269

WANTED, Re-engagement as Manager or Foreman, in mill making tub-sized writing papers; used to all qualities and modern methods of manufacture. Age 44; active and energetic; good references as to character and ability from first-class mills.—Address, No. 7,271, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7271

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Both will be SOLD CHEAP. To be seen at Clyde Paper Mills, Rutherglen, N.B. 720

WET END of Paper Machine Wanted. 60 inches upwards.—Address, No 7,275, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7275

Miscellaneous.

FOR SALE.—Brown Paper Mill in Scotland; 64-inch machine, steam and water power.—Particulars on application to No. 302, Keith and Co., Advertising Agents, Edinburgh. 7276

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

MILL for SALE.—Brown Mill of recent construction, with wide machine, excellent water supply, and outfall into tidal river; railway siding into mill-yard; room on site for extensions.—Address, No. 7,268, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7268

NOTICE TO MILLS.—Mr. I. N. Lyons, of 51, St. Mary-axe, E.C., the well-known twine maker, has 100 tons of waste string every year to offer. Would like to enter into contracts with the consumers of this, as he does not care to sell small lots. Samples to be had on application. 7272

VAT PAPER MILL or small Machine Mill suitable for making finer qualities of paper from rags, WANTED immediately, lease or purchase. Replies should give as full particulars as possible, and will be held as confidential in every respect.—Address, No. 7,273, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7273

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The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

Established 1879.

Printed and Published EVERY FRIDAY by W. JOHN STONHILL, at 58, Shoe Lane, London, E.C.

Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, MAY 13, 1898.

The Proposed Combination of British "News" Mills.

APPARENTLY it is a difficult matter to introduce a policy satisfactory to all the mills that have been approached with the view of forming a "news" combination. A week or two back the negotiations were said to be almost concluded, and that the prospectus would shortly be issued. Now it is reported that there is dissension in the camp, one of the Lancashire mills withdrawing its adhesion to the scheme. Just now British news mills are not suffering to any extent from American competition, as the publication in the United States of "special editions" giving the war intelligence has lately taxed the utmost capacity of the mills across the Atlantic. In consequence of urgent home demand, less attention has been given to export. The Scandinavians, however, are improving their position in the British market, and are now sending large quantities of news for consumption in this country. The principals in the proposed British "combine," who have displayed considerable energy in the matter, are still hopeful that their efforts will be crowned with success.

* * *

Foreign Paper in Great Britain.

IN giving the monthly statistics published by the Board of Trade, it seldom falls to our lot to have to record a decrease in the importation of foreign paper. Such, however, is the case for April, compared with the corresponding month of last year. The total value last month was £278,622, against £299,556 a year ago. For many months past there has been an enormous increase, compared with previous years, in the supplies of "unprinted" paper from "other countries," but so far as the value for April is concerned there is a falling off—£80,216 against £83,371 a year ago. Take the previous month, the value of "unprinted" paper from "other countries" was £102,003, and during March, 1897, £88,135. No doubt less paper has been received from the United States, where there has been of late an enormous increase in the demand, so much so that statements have lately been made as to the possibility of a paper famine.

* * *

Countries Supplying the British Market.

DURING the first four months of this year the total value of the imports of foreign paper into this country amounts to £1,170,349, the sum for the corresponding period of last year being £1,071,789. The following figures show the values of the imports of "unprinted" paper during Jan.-April of this and the preceding year:—

	Jan.-April 1897.	Jan.-April 1898.	Increase or Decrease.
Sweden ...	£114,148	£122,784	+ £8,636
Germany ...	150,276	113,434	— 36,842
Holland ...	145,190	142,837	— 2,353
Belgium ...	98,258	101,151	+ 2,893
Various ...	276,144	373,974	+ 97,830
Totals ...	£784,016	£854,180	+ £70,164

It will be seen that Sweden and Belgium have increased their export trade with Great Britain, but that of Germany and Holland has declined. An increase is shown in regard to "other countries," embracing the United States. The value of printed paper received during the last four months amounts to £101,209, against £102,500 a year ago; straw, mill and wood pulp boards, £214,960, against £185,273.

* * *

Exports of British Paper.

Is the home demand in Great Britain so extensive that the export trade is neglected? Last month's figures show a serious depreciation compared with April, 1897, the values being £119,553 and £149,227 respectively. Taking the four months' trade, the value amounts to £502,164, against £531,357 for the

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corresponding period of last year. The following are the values of the exports of paper (excluding hangings) to the countries mentioned during Jan.-April of this and the preceding year:—

	Jan.-April. 1897.	Jan.-April. 1898.	Increase or Decrease.
France ...	£34,441	£34,637	+ £196
U.S.A. ...	27,911	14,297	— 13,614
S. Africa ...	51,039	43,132	— 7,907
B. E. Indies...	40,841	50,094	+ 9,253
Australasia ...	181,564	156,651	— 24,913
B.N. America	11,696	9,627	— 2,069
Various ...	111,680	115,308	+ 3,628
Totals	£459,172	£423,746	— £35,426

An improvement is shown in the trade with the B. E. Indies, but the shrinkage of £35,426 must be considered very unsatisfactory, the decline being chiefly in shipments to Australasia and the United States.

* * *

Papermakers' Raw Materials.

THE demand for wood pulp and esparto this year compares very favourably with a year ago. Rags have been somewhat neglected. The following are the comparative values of the imports:—

	Jan.-April. 1897.	Jan.-April. 1898.	Increase or Decrease.
Wood pulp ...	£562,676	£584,589	+ £21,913
Esparto... ...	302,400	321,360	+ 19,960
Rags	86,718	67,930	— 18,788

Last month's arrivals of wood pulp were of the value of £151,395, an increase of £20,304 compared with April, 1897; esparto, £84,689, an increase of £44,001; and rags, £16,832, a decrease of £2,969.

* * *

American Paper.

THE exports of American paper are rather easier just now. The latest Treasury statistics issued show, however, that in February last paper was exported to the value of 461,473 dols. The exports during February, 1897, were of the value of 234,005 dols. The percentage of increase is slightly over 97. The record for the eight months ending with February is very nearly as favourable, the gain this year over last being about 89 per cent. The figures were, for the eight months ending with February, 1898, 3,588,594 dols.; for the corresponding period last year, 1,900,108 dols.

* * *

A Papermakers' Club.

THE formation of a Papermakers' Club in London has been suggested by several people in the trade, but, as pointed out in a previous issue of this journal, it is very doubtful whether sufficient support and patronage would be forthcoming to make such an undertaking a success. The New York paper trade has for some time past been agitating for "headquarters," and the idea was favourably entertained by the American Paper and Pulp Association, a committee being appointed to go into the matter. A portion of the twenty-fifth floor of the new "Syndicate" Building at 13-21, Park-row, is now recommended, which is claimed to be a central location, and amongst the attractions may be noted "that a first-class restaurant is to be found one flight up." Those who favour the idea of a Papermakers' Club in London may be interested to know that the promoters stipulate that 100 names be handed in, the subscribers pledging themselves to a liability of £20 each for three years. At present there are under forty subscribers, who do not bind themselves until the list reaches 100.

* * *

New Chilian Customs Tariff.

WE printed in our last issue a list of the import duties on articles connected with paper and print which the Chilian Republic has just seen fit to impose. The chief feature is the stiff tax of 25 per cent. *ad valorem* on all sized papers, and that of about 3d. per lb. (more in most cases than the value of the goods) on millboards, blottings, browns, and wrappings. The reasons for the duties on the two latter are apparent enough, they being practically the only two sorts produced within Chilian territory, but it is doubtful whether either boards or blottings are made there to any extent worth speaking of, not to mention sized makes. It is very difficult, however, to arrive at an exact account of the paper mills in Chili or any other South American State, as all the alleged directories differ from one another to some extent, both as to number, position, and class of make. According to a French contemporary there are but two, *i.e.*, Spellman's (a leading Valparaiso paper house), at Llaillai, and a mill at Peumo, both making chiefly wrappings, ordinary boards, and "paper" of unspecified qualities. According to an English directory the latter mill was closed last year, together with one at Ocoa, but two others are running in their place (both on packings) at Quillota and Buin, the first-named producing 50 tons per month. A recent edition of "Lockwood," however, gives the Peumo, Llaillai, and Buin mills only.

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

THE long business connection hitherto existing between Mr. C. J. Smart and Messrs. Thomas Owen and Co., Ltd., of Ely Paper Works, Cardiff, has, we understand, been determined.

MR. GEORGE ROBERTSON, the Mayor of St. John, N.B., is on a visit to this country. He is announced to deliver an address before the members of the London Chamber of Commerce on May 24th, and he will subsequently visit Manchester and other centres. Mr. Robertson is anxious to help forward trade between this country and Canada, and is particularly interested in developing direct business with St. John. Whilst not connected with the paper trade, he has taken a deep interest in the wood pulp industry and hopes before long to see a large export trade with England.

LOWDEN'S automatic steam damper and pressure regulators are in demand for Scottish mills. Mr. James J. Lowden, the inventor, recently left Boston for this country. He intends staying some time in Scotland, and will install automatic steam pressure regulators in the mills of the Guardbridge Co., at Guardbridge, J. Lovell and Son, at Avon Bridge, Linlithgow; Robert Craig and Sons, Aridrie. He will also install combined exhaust and live steam regulators in the mills of Robert Craig and Sons, and also of the Clyde Paper Co., of Glasgow. The European agents are the West End Engine Works Co., Edinburgh.

MESSRS. PIRIE, WYATT, AND CO., LTD., have removed their London offices from 12, Great St. Thomas Apostle, to more convenient premises at 18 and 19, Queenhithe.

"MR. ARTHUR LLOYD" IN THE UNITED STATES.—Some people believe there is a lot in a name, and one individual—said to be an Englishman, with red hair, a smooth face, light coloured eyes, and a peculiar mouth due to the loss of several front teeth—swears by the name of Lloyd. He is not content, however, with the name simply, but claims to be Arthur Lloyd, of Edward Lloyd, Ltd., proprietors of the *Daily Chronicle*, *Lloyd's Newspaper*, and the paper mills, Sittingbourne. On the strength of this assumed connection he has lately been endeavouring to get members of the paper trade of New York to advance him a little cash, pending a remittance from England. According to his story, he found himself in financial difficulty as he had been down in Texas and was induced to go into a mining scheme and had lost 22,000 dols. The man is a fraud. As a matter of fact, Mr. Arthur Lloyd, one of the directors of Edward Lloyd. Ltd., has never been in America in his life, and has recently been spending three or four months in Egypt and the South of France, but is now in London. Anyone in the United States representing himself to be Mr. Arthur Lloyd, of Edward Lloyd, Ltd., is an imposter.

BRUNNER, MOND AND CO., LTD.—A final dividend of 5 per cent., making 25 per cent. for the year ended March 31st, is recommended by the directors, carrying over £82,000.

MR. WILLIAM DOGGETT, for twenty-seven years with the late Mr. Ernest E. Sabel, has established himself in co-operation with Mr. R. A. Bahn, under the title of Wm. L. Doggett and Co., paper agents and merchants, 14, Queenhithe, London, E.C.

MOSTYN *v.* ATHERTON,—On Friday last week, in the Chancery Division of the High Court of Justice, before Mr. Justice Romer, Mr. Neville, Q.C., asked that their motion—to restrain the defendant from abstracting the water from Holywell, which worked the plaintiff's paper mills, in accordance with a contract entered into with the local authority—might stand over, to enable the defendant's affidavit to be answered. Mr. Levett, Q.C., said he could not extend the undertaking not to take the water beyond Thursday. His Lordship upon that directed the motion to stand until Thursday, and then to come on before Mr. Justice North.

JOHN TULLIS AND SON, LTD.—Registered with a nominal capital of £300,000 in £10 shares (15,000 five per cent. preference). Object, to acquire the businesses of John Tullis and Son, curriers, leather merchants, and machinery belt makers, Glasgow, and the Tullibody Tanning Co., Tullibody, Alloa, of which John Tullis, David Tullis, and James Thompson Tullis are the sole partners, and to amalgamate and carry on the same. Registered office: 80, John-street, Bridgeton, Glasgow.

THE death is announced of Mr. John Bruce Cooper, overseer of the papermaking department of Stoneywood Works, in his 60th year. The end was rather unexpected, an attack of pneumonia carrying him off after little more than a week's illness. One of the Messrs. Pirie's oldest servants, Mr. Cooper was at the same time one of the most respected, being held by employer and employed alike in high esteem. A native of the district, he entered the works when a lad of 15, and he has thus been connected with them for 45 years. His skill, trustworthiness, and intelligence brought him to the front, and he became in turn manager of the cutting and making departments.

PATENT WATERPROOF PAPER AND CANVAS CO., LTD.—At a meeting held at 95, Finsbury-pavement, E.C., the following extraordinary resolutions were duly passed:—(1) "That it has been proved to the satisfaction of the company that the company cannot, by reason of its liabilities, continue its business, and that it is advisable to wind it up, and that the same be accordingly wound up voluntarily, and Mr. Andrew D. Chadwick, of 95, Finsbury-pavement, London, E.C., chartered accountant, be and

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he is hereby appointed the liquidator thereof." (2.) "That the arrangement entered into between the company and its creditors contained in an agreement made between the company of the first part, Alfred Elkanah Healey of the second part, John Polson as representative of the holders of the debentures issued by the company of the third part, and John Brough Bryson and Arthur Holford Gower of the fourth part, which has been read to this meeting be, and the same is hereby sanctioned and approved on behalf of the company."

EXPORTS OF PAPER HANGINGS.—The following statistics show the exports of paper hangings from Great Britain :—

April,	1898	7,077 cwts.	£15,325
,,	1897	7,607 ,,	17,412
,,	1896	7,762 ,,	16,786
Jan.-April,	1898	31,073 ,,	78,418
,,	1897	30,115 ,,	72,185
,,	1896	29,035 ,,	69,555

FOREIGN PAPER RE-EXPORTED.—The following statistics show the total re-exports of foreign paper from British ports :—

April,	1898	5,307 cwts.	£4,580
,,	1897	6,658 ,,	6,763
,,	1896	5,206 ,,	4,223
Jan.-April,	1898	31,014 ,,	25,447
,,	1897	27,796 ,,	24,814
,,	1896	27,665 ,,	20,757

THE E. B. EDDY CO., LTD., of Hull, Canada, have sent us one of their monthly tear-off sheet calendars, covering a period from April, 1898, to the end of 1899. At the top of the sheet a variety of views are included, the chief illustration depicting the company's extensive head office and works. The E. B. Eddy Co. are well-known manufacturers of chemical and mechanical wood pulp, paper, paper bags, etc., and in addition they are largely interested in other industries; for instance, they claim to make and sell 30 million matches daily. Mr. E. B. Eddy is the president, Mr. S. S. Cushman vice-president, and Mr. W. H. Rowley secretary-treasurer, whose portraits, with others of the heads of the departments, alternate on each succeeding sheet.

Stocks and Shares.

The shares of the various paper mill companies have, during the past week, undergone a change, and most of them show a downward tendency. Investors are awaiting with interest the result of the proposed "combine" of paper mills in this part of the country, and with a few sellers coming on, the shares meanwhile are depressed. In this connection, North of Ireland, Darwen, and Star ord. each report a decline of ¼ on the week. Burnley also have shared in the general sway, and are ⅛ lower. Peebles ord. are ⅛ down, and Thomas Owen have slightly eased off. Kellner-Partingtons (part paid) are strong at a rise of $\frac{7}{16}$ on recommendation of 12 per cent. interim dividend.

Among chemical shares, United Alkali have been very actively sought after by buyers, and are very firm at an advance of $\frac{7}{16}$ in ord., 1 point in pref., and ¼ per cent. in debs. Castners also continue strong, and mark an advance of 2s. since last week, although they have been higher still. Brunner, Mond ord. are weak at a relapse of 1½, and Bowman, Thompson have not sustained their rise, and are down ⅜ on the week.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices May 11th.
10	10	Bath Paper Mill Co. (Ld.)	5	11⅛—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	12—13
3½	5	Burnley Paper Co. (Ld.)	10	6—6½
7	7	Bury Paper, ord. ,,	6	6⅞—6⅞
7	7	do. 6% pref.	6	7⅞—7⅞
2½	3	Collin (Darwen) Paper ,,	nil	⅛—⅜
5	5	Darwen Paper Mill Co. "A"	15	11½—12
3½	5	do. do. "B"	15	9—9½
7/10	10	E. Lancashire Paper Co. Ld.	nil	8—8¼
10	10	do. do. 6% pref.	nil	8½—8¾
5	5	do. do. bonus	nil	4—4½
100	100	Ekman Pulp & Paper Co. Ld. debs	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	7—7½
5	5	Hyde Paper Works Co. ,,	nil	1½—2
2½	5	Kelln'r-Part'gt'n P'p Co,,	15	8⅛—8½
5	5	do. do.	15	14—14½
100	100	do. do. debs.	4½	105—107
4	5	N. of Ireland Paper Co. ,,	12½	8½—9
7	10	Olive Brothers ,,	10	7¼—7½
1	1	Owen, T. & Co. 6% pref	6	26/6—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
100	100	do. do. debs.	5	112½—113½
5	5	Peebles (A. M.) & Son ,,	8½	7⅞—7⅞
5	5	do. 5% cum. pref.	5	5¼—6½
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	7—7½
1	1	do. do. cum. pref.	5	1¼—1½
4½	5	Roach Bridge Paper Co. ,,	10	5½—5¾
5	5	Star Paper Co.	10	8½—8¾
3	5	do. do. cum. pref.	10	6¼—6¾
10	10	Waterlow & Sons non.-cum. def.	—	13¾—14¼
		do. do. non.-cum. pref.	4	13¾—14¼
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	6⅞—6⅞
10	10	do. do. cum. pref.	7	10⅛—10⅜
100	100	do. do. debs. (red. 1904)	6	104—106
10	10	Brunner, Mond & Co. (Ld.)	20	40⅛—40⅜
3½	10	do. do. "New" ,,	20	16⅝—16⅞
10	10	do. do. 7% pref. ,,	7	17⅞—18
5	10	do. do. do. new issue	7	8⅛—8⅜
1	1	Castner-Kellner Co. ,,	—	23/—24/-
5	5	Clayton Aniline cum. pref.	6	5⅛—6
10	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11½
100	Stock	do. do. deb. stock (red. 1912).	4	104—106
10	10	United Alkali Co. ,,	2	1⅞—2
10	10	do. do. cum. pref.,,	7	8⅛—9
100	Stock	do. mort. deb. (red. after 1901)	5	107—108

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane,
London, E.C.

MARKET REPORT

IMPORTS and EXPORTS

Of Wood Pulp, Esparto, Rags, &c. &c., at the Ports of London, Liverpool, Manchester, Runcorn Fleetwood, Preston, Barrow, Bristol, Cardiff, Hull, Southampton, Harwich, Dover, Folkestone, Newhaven, &c., for the Week ending Tuesday last.

From SPECIAL Sources and Telegrams

Telegrams—"STONHILL, LONDON."

CHEMICALS.—The market continues quiet, although there has lately been a better demand for export. CAUSTIC SODA is depressed, 76-77 per cent. being quoted £8 5s. to £8 7s. 6d., and 70 72 per cent. £7 5s. to £7 10s. BLEACH is steady at £5 15s. for hard wood f.o.b. and £5 2s. 6d. to £5 5s. for soft wood f.o.r. AMMONIA ALKALI 58 per cent. stands at £4 5s., and SODA ASH, Carbonated 58 per cent. £4 15s., and Caustic, 57-58 per cent. £4 15s. SODA CRYSTALS are without change. SULPHUR is firm.

Alum (Ground), tierces	...	f.o.b. Liverpool	2½	5	5
,, ,, barrels	...	,, ,,	2½	5	15
,, ,, tierces	...	,, Hull	2½	5	2
,, ,, ,,	...	Goole	2½	5	2
,, ,,	...	f.o.b. Glasgow	2½	5	5
Alum Lump) ,,	...	f.o.b. Liverpool	2½	4	12
,, barrels	...	,, ,,	2½	4	15
,, ,, tierces	...	,, Hull	2½	4	12
...		Goole	2½	4	12
,, ,, ,,	...	London	2½	5	2
,, ,, ,,	...	f.a.s. Glasgow	2½	4	12
Alumina Sulphate	...	f.o.b. Tyne	net	3	11
Aluminoferric Cake, slabs		Liverpool ...	...	2	15
,, ,, tierces		,, ...	...	3	2
Alumina Cake, ... slabs		Glasgow ...	...	2	10
Blanc Fixe	...	f.o.b. Tyne	net	6	15
Bleach, ...	...	,, ,,	net	6	0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5
,, (hard wood)	...	f.o.b. Liverpool	net	6	0
,, (soft wood)	...	landed London	net	6	5
Borax (crystals) ...	...	... ...	net	14	10
,, powdered ...	...	... ...	net	15	0
Chloride of Barium	...	f.o.b. Tyne	net	6	12
Caustic White 76%	...	f.o.b. Liverpool	net	8	7
,, 74%	...	,, ,,	net	8	2
,, 70%	...	,, ,,	net	7	10
,, 70%	...	f.o.r. Lancs.,	net	7	7
,, 60%	...	f.o.b. Liverpool	net	6	10
Caustic Cream, 60%	...	f.o.r. Lancs.	net	5	15
,, 60%	...	f.o.b. Liverpool	net	5	17
,, Bottoms 60-62%	...	f.o.r. Lancs	net	4	12
Soda Ash Carbonated 58%		f.o.b. Liverpool	net	4	15
,, ,, 48%		,,	net	4	12
,, ,, 58%		f.o.r. Widnes	net	4	10
,, ,, 48%		,, ,,	net	4	5
,, Ammonia 58%		f.o.b. Liverpool		4	5
,, ,, 48%		,,		4	0
,, Caustic 48%		,,		4	12
,, ,, 57-58%		,,		4	17
Hypo-Sulphite of Soda...		f.o.r Tyne 10 ton lots		4	15
,, 10-ton lots		ex ship Liverp'l	net	5	0
Oxalic Acid	...	f.o.b. Liverpool	3½%	per lb	3
Salt Cake	...	on rail, in bulk		1	0
Ammonia (1sts)	...	f.o.b. Liverpool		35	0
(ends)	...	,,		33	0
Crystals ...	...	f.o.b. Tyne	net	2	17
,, ...	...	ex ship Thames	2½	2	17
,, ...	...	f.o.b. Liverpool	5%	3	0
Sulphur, roll		f.a.s. works	2½	6	5
,, flowers		,, ,,	2½	7	5
,, recovered ...		,, ,,	2½	4	15
Sulphate of Ammonia ,,		,, ,,	2½	8	10
,, of Copper ...		,, Liverpool	5 7	16	10
FOREIGN.—F.o.b. Continental port:					
Hypo-Sulphite of Soda 10-ton lots casks				4	10
Sulphate of Alumina 7-8 cwt. casks net c.i.f. Ldn				3	15
Blanc Fixe (c.i.f. London)				...	0
White Sugar of Lead			26 0	0—27	0
Zinc Oxide				19	5
Bleaching Powder				5	15

CHEMICAL WOOD PULPS.—There is a good enquiry for SULPHITE and prices have a strong upward tendency. Already in the United States and Canada prices have advanced, and the Scandinavians are following the lead.

BRITISH QUOTATIONS.

Prices, ex steamer, East Coast, are nominally as follows:

SULPHITE, Unbleached, Common	£8	12	6	to 9	0	0
,, Superior ,, ...	9	5	0	,, 9	10	0
,, Bleached, ...	11	10	0	,, 15	0	0
SODA, Unbleached, Common ...	8	5	0	,, 8	10	0
,, Extra...	8	15	0	,, 9	5	0
,, Bleached	10	10	0	,, 22	0	0

SCANDINAVIAN QUOTATIONS.
(Official).

Prime Sulphite, f.o.b....	Kr. 160
Sulphate, f.o.b.	Kr. 120 to Kr. 140

FRENCH QUOTATIONS.
C.i.f. Rouen, per 100 kilos. (2 cwt.)

BISULPHITE, Unbleached, dry, 1st quality	Frs.	22.75	to 23.5
,, Bleached...		33	,, 36
SODA AND SULPHATE, Unbleached, 1st. quality		22	,, 22
,, ,, ,, 2nd quality		19	,, 19 50
,, ,, ,, Bleached		27	,, 34

AMERICAN QUOTATIONS

AMERICAN SULPHITE, Unbleached	$1.3	to 2
,, SODA Bleached	1.90	2.10
FOREIGN SODA, Unbleached ...	2.15	2.10
,, Bleached	2.70	2.80
,, SULPHITE, Bleached...	3.15	3.50

MECHANICAL WOOD PULPS.—The demand is fairly good, and quotations are firmly maintained. Manufacturers in Scandinavia report that they have not had the usual floods from the rivers this year, owing to the small fall of snow last winter. It is thought there might be a scarcity of water later on unless the summer should turn out very wet.

BRITISH PRICES.

Ex steamer, East Coast, are nominally as follows:

Aspen, Dry	£0	10				
Pine, Dry	£4	8	9	to 4	12	6
,, Moist	2	5	0	,, 2	7	6
Brown, Dry				4	15	0
,, Moist				2	10	0

FRENCH QUOTATIONS (PARIS).

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos (2 cwt.)

Pine Pulp, 50% moisture, ordinary ...	Frs. 9.50	to 10.50
,, ,, fine ...	11	,, 12
,, dry, ordinary	10.50	,, 11
,, ,, fine	11	,, 12
Aspen ,, fine	15	,, 16.50
Half-Chemical Brown, 50% moisture	10.75	,, 11.25
,, ,, dry ...	11 75	,, 12.25

AMERICAN QUOTATIONS.

F.o.b. Mill, nearest port (per 2,000 lbs.) .. $13

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
1528 bales	Gothenburg	Henderson, Craig	London
1396 ,,	Christiansand	E. & W. Goldsmith	,,
201 ,,	Drammen	Johnsen and Jorgensen	,,
250 ,,	,,	Warwick Isaac and Co	,,
100 ,,	,,	Tough and Henderson	,,
400 ,,	,,	Hummel and Co	,,
3156 ,,	Antwerp		,,
3295 ,,	Drammen		,,
100 ,,	Ostend		,,

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Quantity	From	Importer	Port
150 bales	Fredrikstadt	H. B. Wood	London
60 ,,	,,	W. G. Taylor & Co	,,
406 ,,	Hambro		,,
880 ,,	Boston		,,
2693 ,,	St. John's		,,
3700 ,,	Christiania	Becker & Co	,,
2600 ,,	,,		,,
17 cases	Philadelphia		,,
140 bales	Ghent		,,
3113 rolls	Antwerp		,,
272 bales	Gothenburg	H. Pearsall	,,
320 ,,	,,		,,
609 ,,	Rotterdam		,,
2445 rolls	St. John		Liverpool
164 ,,	Rotterdam		,,
741 bales	New York		Hull
600 ,,	Drontheim		,,
2457 ,,	Christiania		,,
160 ,,	Christiansand		,,
1409 ,,	Gothenberg		,,
219 ,,	Hango		,,
32 ,,	Helsingfors		,,
143 ,,	New York		Manchester
1602 ,,	Drammen		,,
3850 ,,	Skien		,,
43740 ,,	Bangor		,,
627 ,,	Hambro		,,
123 ,,	Hamburg		Harwich
201 ,,	Konigsberg		,,
80 ,,	Copenhagen		Leith
561 ,,	Gothenburg		Granton
1282 ,,	Drammen		Bristol
2396 ,,	Skein		Preston
6400 ,,	Christiania		,,
4716 ,,	Skein		,,
4329 ,,	Ronneby		,,
180 ,,	Halifax		Glasgow
66 rolls	New York		,,
1792 ,,	Christiania		Grangemouth

Totals of Wood Pulp from Each Country:

BELGIUM ...	3396 bales	HOLLAND ...	673 bales
,, ...	3313 rolls	NORWAY ...	36807 ,,
CANADA ...	1109 bales	PRUSSIA ...	200 ,,
,, ...	2445 rolls	SWEDEN ...	8810 ,,
DENMARK ...	80 bales	U.S.A. ...	45504 ,,
FINLAND ...	251 ,,	,, ...	17 cases
GERMANY ...	1166 ,,	,, ...	66 rolls

ESPARTO.—The market is quiet, but sellers for the most part are unwilling to quote until the possible effect of the war between America and Spain on the latter country can be estimated. Spanish esparto is in request, but owing to sellers attitude little business is being done. African is firmer but enquiry is small. The April arrivals have been very heavy.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston and Tyne Docks are nominally as follow:—

Spanish—Fair to Good	£4 17 6	to	5 5 0
,, Fine to Best	5 10 0	,,	5 15 0
Oran— Fair to Good	3 17 6	,,	3 0 0
,, First Quality	3 5 0	,,	3 7 6
Tripoli—Hand-picked	3 0 0	,,	3 2 6
,, Fair Average	2 15 0	,,	2 17 6
Bona & Philippeville	3 5 0	,,	3 7 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
1522 bales	Aguilas	Guardbridge Co	Dundee
250 tons	,,	Morris and Co	Tayport
500 ,,	Alicante	,,	Aberdeen
560 ,,	,,		Granton
300 ,,	Almeria		,,
400 ,,	Carthagena	H. Ottmann	,,

STRAW.—Prices:

Oat Straw, ... c.i.f. London 37/6; f.o.r. Goole, 37/6
Wheat ,, ... do. 37/6; do. 37/6
Rye ,, ... do. 50/6; do 5 /6

STRAW PULPS.—Market firm.

Prices c.i.f. London Hull or Leith

German, dry. No. 1 ... ... £14 0 0
,, No. 2 ... ... £13 0 0

JUTE.—Prices:

Good Wht £15 0 to £16 10 Common £7 10 to £9 0
Good £13 0 to £14 10 Rejections £6 10 to £8 10
Medium £10 0 to £12 10 Cuttings £3 0 to £4 0

FOREIGN RAGS.—The demand for continental rags is rather small; the arrivals of late have been chiefly from France and Belgium. The imports at British ports during the week were as under, and it may also be noted that 263 packages of rag pulp were received at London from Rotterdam:—

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
168	Ghent	Hull	105	Antwerp	Goole
163	Copenhagen	,,	70	Amsterdam	,,
83	Rotterdam	,,	81	Rotterdam	Grimsby
140	Konigsberg	,,	85	Hambro	,,
247	Stockholm	,,	424	Dieppe	,,
67	Amsterdam	,,	86	Bremen	Leith
210	Dunkirk	,,	482	Ghent	,,
73	Hambro	,,	127	Amsterdam	,,
15	Treport	London	5	Antwerp	,,
109	Leghorn	,,	65	Rotterdam	,,
40	Fiume	,,	75	Dunkirk	,,
40	Dunkirk	,,	162	Konigsberg	,,
8	Antwerp	,,	48	Bordeaux	Liverpool
54	Amsterdam	,,	12	Cadiz	,,
39	Rouen	,,	24	New York	Manchstr
8	Rotterdam	,,	45	St. Nazaire	Newhvn
54	Delfzyl	Goole	43	Caen	,,
174	Ghent	,,	36	Jersey	Southampton
31	Boulogne	,,	8	Guernsey	,,
116	Hambro	,,	49	Cherbourg	,,
67	Dunkirk	,,			

Totals from Each Country:

BELGIUM ...	542 bales	HOLLAND ...	609 bales
CHANNEL Isles	44 ,,	PRUSSIA ...	302 ,,
DENMARK ...	163 ,,	SWEDEN ...	247 ,,
FINLAND ...	40 ,,	SPAIN ...	121 ,,
FRANCE ...	1096 ,,	U.S.A.	24 ,,
GERMANY ...	360 ,,		

BELGIAN RAGS.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6 Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens No. 1	21/0	Fustians (Light ...	4/0
,, ,, No. 2	16/0	,, (Dark) ...	3/0
,, ,, No. 3	12/0	Black Cottons ...	3/0
Fines (Mixed) ...	12/0	Hemp Strings (unt'r'd	2/3
Grey Linens (strong)	9/6	House Cloths ...	2/9
,, (extra)	14/6	Old Bagging (solid	3/0
Blue Linens... ...	8/0	,, ,, (common	2/6
White Cottons S'p'fine	18/0	NEW.	
,, ,, No. 2	15/6	White & Cream Linen	3:/0
Oatshots No. 3 ...	10/0	White Cuttings ..	22/6
Seconds No. 4 ...	8/0	Unbleached Cutt'gs	21/0
Prints (Light ...	8/6	Print Cuttings ..	8/6

BELGIAN FLAX and HEMP WASTE.

Best washed and dried Flax Waste 10/0; Fair ditto 8/0
Flax Card Waste 6/0
Hemp Waste, No. 1 8/0; No. 2 ... ... 3/0

DUTCH RAGS.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 per cwt.	14/0	Mxd Hemp Rope—	
,, No. 2 ...	9/9	Broken (in bags)	6/0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,,	4/9
Clean House Cloth	3/0	Canvas No. 1 ..	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/6
Coloured Prints ...	2/7½	,, No. 3 ..	6/1
Dark Prints... ...	2/1½	W. Untarred Rope	9/3
Blue Cottons ...	5/0	Paper Shavings—	
Light Lilac Cottons	7/0	Free from wood	7/0
Mxd Hemp Rope coils)	8/0	Not free from wood	5/0

GERMAN RAGS.

HAMBURG: F.o.b.

NWC	19/0	FF Grey Linens ..	8/0
SPFFF	18/0	LFX Second ditto...	7.0
SPFFF and SPFF	17/0	CSPFFF	14/0
SPFF	14/0	CSPFF	10/0
SPF	11/0	CPB	6/0
CCC	5/0	Dark Blues selected	11/0
CFX	4/0	Wool Tares.. ..	8/0
White Rope... ...	6/0	Jute, No 1 6/-: No. 11	5/0

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STETTIN: C.i.f. Hull, Leith, Tyne and London.

SPFFF and SPFF	17/6	LFB (Blue)	4/6
SPF	12/6	CSPFFF	10/6
FF	8/6	CSPFF	16/6
FG	8/6	CFB (Blue)	/6
FFX	7/6	CFX (Coloured)	4/6

FRENCH RAGS.

Ex ship London, Liverpool, Hull, 7/6 extra; Manchester Bristol, Leith, 10/- extra.

French Linens, I	21/6	Black Cotton	2/6
II 15/6; III	9/6	Blue Linens	7/6
White Cottons, I	15/6	New Light Prints	16/6
II 12/6; III	8/9	New White Cuttings	20/6
Coloured Cotton	3/6	,, Stav ,,	15/6

PRUSSIAN RAGS.

C.i.f. London, Hull, or Leith.

SPFF	16/6	CC (Cotton)	4/6
SPF	12/6	Jute I	3/6
FG	10/6	,, II	2/6
LFB	8/6	Rope I	8/6
FF	5/6	,, II	6/6

NORWEGIAN RAGS.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred)	8/3-9/6	2nd Canvas	7/6
2nd ,, ,,	5/6-6/6	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny	3/6-5/6
Best Canvas	11/6-12/6	Mixed	2/6-2/6

TURKISH RAGS.

F.o.b. Constantinople, Smyrna, and Salonica:

1st White Cottons*	2/6	Sail Cloth or Canvas	5/6
2nd ,, ,,	2/6	Rope, Thick	6/6
Blue Cottons	1/3	,, Small	4/6
Coloured ,,	1/3		

* At Smyrna and Salonica.

HOME RAGS.—LONDON: The demand for all classes of papermaking material is fairly good; prices remain without change.—BRISTOL: Steady demand.—MANCHESTER: Market quiet.—EDINBURGH and GLASGOW: There is a good demand, especially for the best classes of rags; prices firm.—DUBLIN: Steady trade, without change in values.

LONDON

N. White Cuttings	18/6-22/6	Canvas No. 1	14/6-15/6
Fines (selected)	19/6-21/6	,, No. 2	9/6-10/6
,, (good London)	17/6-17/6	,, No. 3	5/6
Outshots (selected)	11/6	Mixed Rope	3/6-4/6
,, (ordinary)	9/6	White Rope	3/6-5/6
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/6
Country do.	4/6-6/6	Coil Rope	9/6
London Thirds	1/3	Bagging	1/3-1/9
Country do.	2/6	Gunny	2/6-2/3

BRISTOL:

Fines	16/6	Clean Canvas	14/6
Outshots	9/6	Second Do.	9/6-10/6
Seconds	5/6	Light Prints	6/6
Thirds	2/6	Hemp Coil Rope	9/6-10/6
Mixed Bagging	2/6	Tarred Manilla	6/6

MANCHESTER:

Fines	14/6-15/6	Blues	4/3-4/6
Outshots (best)	9/6	Bagging	2/6-3/6
,, (ordinary)	8/6	,, (common)	2/6-2/3
Seconds	4/6-5/6	W. Manilla Rope	7/6-7/6
Thirds	2/6-2/6	Surat Tarea	2/6-3/6

EDINBURGH:

Superfines	15/6	Black Cottons	2/6
Outshots	12/6	W. Manilla Rope	7/6
Mixed Firsts	14/6	Tarred Manilla Rope	5/6
Common Seconds	7/6	,, Hemp Rope	8/6
First do.	10/6	Rope Ends (new)	6/6
Prints	5/6	,, ,, (old)	4/6
Canvas (best)	15/6	Bagging	2/3
2nd	8/	,, (clean)	3/6-4/6

GLASGOW.

Fines	12/6-16/6	Canva No. 1.	15/6
Blues	4/6	,, No. 2.	10/6
Common Blues	3/3	Manilla Rope	8/6
Bagging	4/6	Tarred Hemp	

DUBLIN.

White Cuttings	16/6	Mill Bagging	2/6
Fines	9/6	White Manilla	6/9
Seconds	3/6	Tarred Hemp	6/6
Light Prints	2/6	Rigging	10/6
Black do.	1/6		

WASTE PAPERS.—There is a good demand, at steady prices.

Cream Shavings	10/6	Small Letters	3/3
Fine ,,	8/6	Large ,,	4/6
Mixed ,,	2/6	Brown Paper	2/6
White Printings	7/6	Light Browns	3/3
White Waste	1/9	Dark ,,	2/3
Wood Pulp Cuttings	3/6	Books & Pamphlets	3/6
Blue Paper	2/6	Strawboard Cuttings	1/6
Crushed News	2/6	Jacquards	2/6

For Export: 2s/- per ton extra

FLOCKS.—Cotton Flocks, fine quality, £2 10s. per ton at works.

STARCH.—Maize and Dextrine show an advance.

F.o.r. London, less 2½%

Maize—Crisp, £9 10/-; Pearl, £8 5/-; Powder, £8 Special £14.

Farina—Prime, £12 0/-; B.K.M.F., £14 0/-.

Delivered, less 2½%:

Rice—Special (in chests), £19 0/-; Crystal (in bags £18 10/-. Granulated (in bags) £17 10/-.

Dextrine—£16

SIZING.—Trade brisk; no stocks.

English Gelatines per cwt.	90/6	to	120/6
Foreign ,,	70/6	,,	100/6
Fine Scotch Glues	45/6	,,	60/6
Best Long Scotch Glues	40/6	,,	60/6
Common Black ,,	25/6	,,	28/6
"Town" Glues	38/6	,,	45/6
"Bone" Glues	26/6	,,	30/6
Foreign Glues	28/6	,,	35/6
Bone Size	5/6	,,	10/6
Gelatine Size	6/6	,,	10/6
Dry B.A. Pieces	50/6	,,	55/6
,, English Pieces	35/6	,,	45/6
Wet ,, ,,	8/6	,,	9/6
,, Sheep Pieces	3/6	,,	4/6
Buffalo Hide Shavings	32/6	,,	40/6
,, Picker Waste	32/6	,,	35/6

ROSIN.—Quotations are somewhat higher. Supplies are small on the spot, and shipments from America are difficult. Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WG	WW
5/6	5/3	5/6	5/9	6/3	6/9	7/-	7/6	8/-	8/9	6/6

COLOURS.—Market quiet.

Mineral Black	cwt. 3/6	PASTE COLOURS with 60% of colour, as follows	
do. superior	,, 4/6		
Pure Ivory Black	,, 12/6	Orange Pulp	cwt. 4/6
Ochre	,, 2/3	Golden Yellow Pulp	30/6
French J. C. Ochre	ton 60/6	Lemon ,,	,, cwt. 30/6
Chrome (pure)	cwt. 40/6	Prussian Yellow	,, 36/6
Red Oxide	,, 4/6	Green (free of arsenic	26/6
Umber, Devonshire	,, 50/6	Paste Blue, 20%	18/6
do. Turkish	,, 40/6	,, 33%; 28/6; 45%	45/6
Lamp Black	,, 5/6-7/6	Imperial Yellow (dry	16/6
Ultramarine (pure)	35/6-45/6	(less 2½% d/d)	
Cochineal	lb. 4/3-2/6		

MINERALS.—CHINA CLAY and FRENCH CHALK are in steady request at former prices. There is a good demand for MINERAL WHITE, and a fair amount of business is passing in SATINITE and SNOWDRIFT.

Mineral White also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or best at makers' works:

Superfine	28/6	less 2½%; del. Lancashire			38/6
Pottery Super.	24/6	,,	,,		34/6
Ball Seconds	20/6	,,	,,		30/6
Seconds	15/6	,,	,,		25/6
Thirds	11/6	,,	,,		21/6

(Manchester 2/- per ton less)

China Clay, in bulk, f.o.b. Cornwall, 9/6 to 23/6, bags 4/6 and casks 9/6 per ton extra; delivered Lancashire 38/6 to 41/6 (for best papers); f.o.r. London, in casks 45/6 per ton; f.o.b. Liverpool in 5 cwt. cask 44/- to 50/6.

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French Chalk, W.E., W.I.N.S.E.R., W.O. and other brands, 59/0, 64/0, 73/6, and 77/6 per ton, according to quality less 2½%.
Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15/0 to £5 2/6 per ton of 10 bags
Superfine Hardening, f.o.r. works, 40/- to 42/-.
Patent Hardening (2 ton lots) f.o.r. Lancs., £3 5/0.
Snowdrift (Paper Toughener), in ton lots, 12/- per cwt
Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16/6; calcined, £10 7/6.
Magnesite (in lump) 39/6 per ton.
Albarine, £3 del. mills.
Asbestine Pulp, £4 to £4 10/- per ton c.i.f. London Manchester and Glasgow.
Asbestos, brown grades, £14 to £14 12/6.
Sulphate of Barytes, No. 1, 64/0; 2, 52/0; 3, 42/0; 4, 37/6, per ton, according to quality.
Bauxite, minimum alumina, 60%, 16/3 f.o.b.
Pyrites (non-cupreous), f.o.b. shipping port 4½d. per unit.
Satinite, £3 to £3 6s. 6d., in casks, f.o.b Liverpool or Manchester.
Whiting, f.o.b., 10/6 to 12/3 per ton.
Sulphate of Alumina, £4 2/6 to £4 15/- per ton del.
Hydrate of Alumina, £12 10/0.

LIME—The present price is 10/6 per ton f.o.r

METALS. — LONDON: COPPER is in good demand; TIN steady; LEAD quiet. Tuesday's official closing prices:—

	£	s.	d.	£	s.	d.
COPPER—						
G.M.B., cash	51	1	3	51	6	3
,, three months	51	10	0	51	15	0
Tough	54	0	0	54	15	0
Best selected	54	15	0	55	10	0
Strong Sheet	62	0	0			
TIN—						
Fine foreign, cash	65	15	0	66	5	0
,, three months	66	7	6	63	17	6
LEAD—						
Spanish...				14	0	0
English				14	2	6

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AUSTRALASIA	3487	378	1166
AFRICA	85	99	214
ARGENTINE	—	130	151
B. W. INDIES	9	10	—
B. GUIANA	32	21	—
BELGIUM	77	2	23
CAPE COLONY	319	77	77
CANADA	—	4	—
CHINA	825	33	213
CHANNEL ISLES ...	—	—	31
EGYPT	29	9	—
FRANCE	154	43	7
GERMANY	29	—	—
HOLLAND	12	—	66
INDIA	215	353	161
JAPAN	145	47	—
MAURITIUS	54	—	—
NEW ZEALAND	185	222	819
PORTUGAL	58	9	13
SPAIN	—	11	78
SWEDEN	—	8	36
U.S.A.	33	—	14
W. INDIES	—	—	6

FROM GLASGOW.

AUSTRALASIA	3614	1639	11
B. GUIANA	—	23	40
CANADA	—	—	23
B. W. INDIES	—	17	—
HOLLAND	—	—	55
INDIA	94	—	65
SPAIN	—	—	10
S. AMERICA	104	—	—
SWEDEN	—	14	—
U.S.A.	29	13	—

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	103	—	—
BELGIUM	2046	5	—
CHINA	74	—	—
DENMARK	96	—	247
FRANCE	660	5	—
FINLAND	331	—	—
GERMANY	2401	41	260
HOLLAND	16803	10	—
INDIA	—	16	—
ITALY	13	—	—
JAPAN	109	—	—
NORWAY	4221	1	372
SWEDEN	4943	—	—
U.S.A.	692	268	102

Including the Following:—

Quantity	From	Importer	Port
108 bales	Christiania	Davies & Royle	London
	,,	J. Eberstein	,,
	,,	Becker & Wagner	,,
	,,	C. Morgan & Co	,,
	,,	Alsing & Co	,,
	,,	Major & Field	,,
20 bales	Christiansand	J. M. Daal	London
27 ,,	,,	Crabb & Co	,,
39 ,,	,,	Guppy & Co	,,
52 ,,	,,	J. Spicer & Sons	,,
16 ,,	,,	Witting Bros	,,
12 ,,	,,	E. Lloyd	,,
21 ,,	,,	C. Morgan & Co	,,
18 ,,	,,	Cookson & Co	,,
6 ,,	Copenhagen	Puckell & Co	,,
6 ,,	,,	Spicer & Son	,,
186 ,,	Drammen	F. Claydon	,,
3 ,,	,,	A. J. Brown & Co	,,
5 ,,	,,	J. Hamilton	,,
287 ,,	,,	L. Henle	,,
111 ,,	,,	Alsing & Co	,,
9 ,,	,,	Crabb & Co	,,
66 ,,	,,	Puckert & Co	,,
6 ,,	,,	H. Peabody	,,
6 ,,	,,	E. Lloyd	,,
52 ,,	Fredrikstadt	Olive & Partington	,,
4 ,,	,,	J. Spicer & Sons	,,
24 ,,	,,	J. Hamilton	,,
9 ,,	Gothenburg	Becker & Wagner	,,
1 ,,	,,	O. Scholzig	,,
179 ,,	,,	Eberstein & Co	,,
6 ,,	,,	M. Relph & Co	,,
84 ,,	,,	Cookson & Co	,,
259 ,,	,,	R. L. Lundgren	,,
5 ,,	,,	J. Spicer & Sons	,,
6 ,,	,,	Crabb & Co	,,
7 ,,	,,	Schenkenwald & Co	,,
2 ,,	,,	Legge & Co	,,
113 ,,	,,	Waterlow & Co	,,
46 ,,	,,	T. Hamilton	,,
136 ,,	,,	Brown & Brough	,,
48 ,,	Trieste	Schenker & Co	,,
2 ,,	,,	B. Perdichis	,,

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

854 b	Rotterdam	London	464 b	New York	Manchest
440 ,,	Cologne	,,	1200 ,,	Newp't News	Glasgw
14231 ,,	Emden	,,	4812 ,,	Delfyzl	Grangemth
63 ,,	New York	,,			

WOOD PULP BOARDS.

22 c	Boston	London	18 c	Boston	London
90 b	Christiania	,,	329 b	Gothenberg	,,
665 ,,	New York	,,	24 ,,	Gothenburg	Hull
120 ,,	Hambro	,,	77 ,,	Christiania	Grngmth
120 ,,	Helsingfors	,,	20 c	,,	,,

MILLBOARDS.

2735 b	Delfyzl	Goole	6907 b	Harlingen	Hull

PASTEBOARDS.

1524 b	Trieste	London	20 b	Trieste	Hull
69 ,,	New York	,,	205 ,,	New York	Manchestr
42 ,,	Amsterdam	,,	3 c	Hambro	,,
9958 ,,	Harlingen	Leith	3 b	Rotterdam	,,
400 ,,	Antwerp	,,	10 ,,	Malmo	Grimsby

b—bales. c—cases. r—rolls. cr—crates.

NEW PATENTS.

APPLICATIONS.

8,754. The adjustable two bladed deckle edge cutter or knife. J. G. Masson.

8,901. Improvements in the manufacture of hats and other articles from pulp and apparatus therefor. J. H. Neave.

9,003. Improvements in the manufacture of caustic alkalies by means of alkaline aluminates. D. A. Peniakoff.

9,111. Improved process for the manufacture of chlorine and caustic soda. J. Plummer.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

1897.

30,362. Apparatus for cooling paper in a paper machine or for removing dust and the like from paper in paper machines, cutting, ruling, and other machines or apparatus. Staffel.

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Soda and

Mechanical

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CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 33.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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British Imports of Wood Pulp.

The following is the official classification of the imports of wood pulp for April :—

Chemical.

From Norway...	...	7,921 tons	£48,833
,, Other Countries		6,698 ,,	48,407

Mechanical.

From Norway...	...	7,763 tons	£20,164
,, Other Countries		10,677 ,,	33,991

January-April imports :—

Chemical.

From Norway...	...	27,753 tons	£181,018
,, Other Countries		22,355 ,,	172,625

Mechanical.

From Norway...	...	42,604 tons	£109,508
,, Other Countries		29,712 ,,	121,438

The total imports from Norway and "other countries" stand as under :—

FROM NORWAY.

April	1898	15,684 tons	£68,997
,,	1897	16,800 ,,	69,484
,,	1896	19,380 ,,	79,935
Jan.-April	1898	70,357 tons	£290,526
,,	1897	83,583 ,,	339,074
,,	1896	68,699 ,,	304,202

FROM OTHER COUNTRIES.

April	1898	17,315 tons	£82,398
,,	1897	8,720 ,,	61,607
,,	1896	4,817 ,,	38,121
Jan.-April	1898	52,067 tons	£294,063
,,	1897	30,546 ,,	223,602
,,	1896	21,569 ,,	155,752

The following statistics show the total imports of wood pulp into Great Britain for the periods mentioned :—

TOTAL IMPORTS.

April	1898	33,059 tons	£151,395
,,	1897	25,610 ,,	131,091
,,	1896	24,197 ,,	118,056
Jan.-April	1898	122,424 tons	£584,589
,,	1897	144,129 ,,	562,676
,,	1896	90,268 ,,	459,954

British Imports of Esparto.

The arrivals of esparto last month show an enormous increase compared with April last year. The figures for the four months also show a substantial advance. The following are the

TOTAL IMPORTS.

April	1898	23,751 tons	£84,689
,,	1897	10,026 ,,	40,688
,,	1896	14,981 ,,	64,779
Jan.-April	1898	85,523 tons	£321,360
,,	1897	73,353 ,,	302,400
,,	1896	76,130 ,,	324,613

The increased imports last month were chiefly due to the arrivals from Algeria. The quantity received amounted to 11,506 tons of the value of £39,467, compared with 4,510 tons of the value of £16,001 during April last year. The four months' imports reached 36,358 tons of the value of £127,287, compared with 27,271 tons of the value of £103,070.

The imports from Spain last month amounted to 3,726 tons of the value of £17,581, against 3,627 tons of the value of £18,425. For the four months 21,578 tons of the value of £105,187, against 24,848 tons of the value of £124,055.

The imports from other countries last month were 8,519 tons of the value of £27,648 against 1,888 tons of the value of £6,262. The four months' arrivals reached 27,587 tons of the value of £88,886, against 21,234 tons of the value of £75,275.

THE German and Austrian exportation of paper to the Balkan countries has lately found a very active rival in Roumanian mills. According to official reports the Busteni Paper Mills, the largest in Roumania, are so arranged that their production can be made to keep pace with the increasing demand. The importation of common papers is prevented by heavy duties. Only a few high-class papers, which are not made in Roumania, are still imported. Of the four Roumanian paper mills, the largest is the Busteni, which in 1897 made 175,232 kilos. straw paper, 656,171 kilos. brown paper, 272,506 kilos. ordinary packing paper, 34,173 kilos. tinted ditto, 612,280 kilos. writing and printing, and 309,088 kilos. cardboard. Total production, 2,200 tons. A mill at Letea has arranged to put in a new machine. The Roumanian Government supports the home industry in every possible way, and has ordered all public offices to buy at Letea. The Azuga Paper Mills employ 231 workmen. Most of the raw materials for Roumanian mills have to be imported.

A NEW ITALIAN TRADE JOURNAL.—Italy, which has hitherto been without a practical organ representative of the paper, printing and allied trades, is to have that want supplied in future. We have received the first number, dated April 15th, of *L'Industria della Carta*, published at Milan, under the auspices of Signor Luigi Zuanelli. For a first issue the periodical in question, with its 24 pages of advertisements and 12 of news, makes a very respectable show indeed. The literary portion, however, does not have quite so much local "colour" as we should have expected, being largely made up of articles from other papers, including our own. This will, no doubt, be attended to in future numbers, when the new comer has got fairly into swing. The interests of paper and print in the Italian cities and provinces are considerable, and a really practical effort to cater for them on the spot should meet with that success which we trust Sig. Zuanelli will experience. His paper is to be published twice per month, and we gather from the prospectus that it will be a subscription journal, and not (as so many of our home contemporaries unfortunately are) a mere gratuituous advertising sheet, sent broadcast to everybody whose name happens to be found in a trade directory.

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Abridged Patent Specifications.

6,430 (97).—Improvements in Folding Boxes made of Cardboard, Leatherboard and the like.—REGINALD HARRY FILMER. Accepted 15th January, 1898.

Applies to that class of box body which has its four sides permanently connected together and capable of folding on the lines connecting them with the bottom, the two opposite sides of the box being also creased or grooved and folded on lines of 45 degrees extending from the bottom corners of the sides to the upper edges of the latter. Boxes of this character have heretofore been made only of small dimensions and of comparatively thin material for use as egg boxes, and they have depended for their stiffness on the interior cardboard divisions used. In this invention the patentee claims to be able to make a large stiff box body having the sides permanently connected together, which, whilst capable of being readily folded flat on to the bottom for storage, are also provided with strengthening or stiffening flaps on the two doubly folded sides.

7,259 (97).—An Improved Mode of Cutting Out and Grooving or Indenting Cardboard, Millboard, Paper, Thin Wood, and other Materials from which to form Boxes and other Articles.—ROBERT SANSON, JUN. Accepted 29th January, 1898.

The cutting and grooving or indenting of the material is performed at one operation and in a novel manner, according to this invention. For making cardboard blanks for fancy boxes, a number of cutting blades are set up in a suitable frame, which cutting blades may be straight or curved according to the shape of the blank to be cut. Arranged, also in the frame, if it is also desired to groove the cardboard, are grooving knives or strips, set up in the frame at a slightly lower level, corresponding to the depth of the grooves desired, than that of the cutting blades. The frame is placed on a table with the cardboard to be cut on top of the frame. The table is caused to travel underneath a pressure roller or cylinder, and the cardboard is subjected to a pressure sufficiently heavy to cause the knives to cut and (or) indent the material in the proper manner.

27,746 (97).—Improvements in Machines for Cutting Paper, Leather, Cloth, Metal, and other Material.—HENRY ANSEL HANNUM. Accepted 22nd Jan., 1898.

To provide a simple, convenient and efficient machine for either trimming the edges of or cutting strips from sheet material is the object sought in this invention, which consists in the combination of a rotary annular cutter having its periphery bevelled bluntly or abruptly to form a rotary cold-chisel having an obtuse angled cutting ridge which may extend either straight or in a serpentine direction around the periphery, which latter form tends to draw the material to its position to be cut, in combination with an annular revoluble anvil having a transversely straight and smooth hard-metal peripheral face sustained uniformly in contact with the cold-chisel throughout the length of the line of cutting, whereby the severing of the interposed material is effected without danger of breaking the cutting edge of the cold-chisel.

9,374 (97).—Machine for Cutting Paper into Strips or Shavings.—RICHARD JAMES ROUSAY and WILLIAM GARDNER SINCLAIR. Accepted 29th Jan., 1898.

This machine is constructed on the rotary principle, having two sets of circular cutters, which will be 4½ inches in diameter, more or less, and of different thicknesses according to the width of shavings to be cut. These cutters are arranged on two spindles intersected with washers of a similar diameter, but of the same thickness, as also the washers. The edges of the knives are turned dead square and the sides polished. The washers may be of cardboard, rubber, metal or other substance. There is an upper and a lower cutter, the latter working into the former or *vice versa*. For the purpose of preventing the paper from being carried round the spindles between the knives there is a piece of brass or other metal attached close to and between the knives, so as to lead the shavings away and thus keep both top and bottom cutters always clear. The paper may be fed into the machine in sheets or from the reel. In the latter case the reel or reels will be attached behind the machine, which will be constructed to cut a single or any number of sheets up to twenty or more at one time. The paper is conveyed to the cutters by means of two or more rollers, and after passing through the cutters the strips or shavings are again conveyed by means of one or more rollers on to the back table of the machine, on a certain part of which there is erected a dead knife with gearing for another circular cutter, for the purpose of cutting the strips or shavings from the web into any length required. This done, the shavings or strips drop on to the endless canvas sheet and are thus conveyed to a receptacle ready to be packed up.

PARIS EXHIBITION.—The Royal Commission for the British Section of the Paris Exhibition, 1900, have issued an advance pamphlet, which contains the full list of the commissioners. The general classification of exhibits covers fifty-four pages, the classes numbering 120. Colonel Herbert Jekyll, C.M.G., is Secretary to the Commission, the offices of which are at 23, Great George-street, Westminster, S.W.

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
A B..	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba.	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C..	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D..	71	28	750	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E..	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F..	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G..	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H..	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55½	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I..	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z..	210	82½	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
2 cases	Antwerp	Frost and Adams	Boston
6 ,,	Hull	J. Hunter	New York
60 ,,	Havre	Druckleib and Co	,,
61 ,,	,,	American Tobacco Co	,,
105 ,,	,,	Amsinck and Co	,,
83 ,,	,,	Stone and Co	,,
17 ,,	,,	Walton and Co	,,
2 ,,	,,	De Jonge and Co	,,
9 ,,	,,	Knauth, Nachod & Co	,,
5 ,,	,,	Meyer and Co	,,
4 ,,	,,	S. and A. Borgziner	,,
5 ,,	,,	Hensel, Bruckmann	,,
7 ,,	,,	A. Kraut	,,
1 ,,	,,	Anthony and Co	,,
4 ,,	London	Dickinson and Co	,,
1 ,,	,,	Lunham and Moore	,,
7 bales	Liverpool	Dennison Mfg. Co	Boston
4 cases	,,	,,	,,
4 ,,	,,	Kupfer Bros	New York
52 ,,	Marseilles	B. F. Kahn	,,

CHEMICAL FIBRE.

90 tons	Liverpool	G. A. Clarke	New York

MANILLAS.

35 bales	Antwerp	Castle and Gotheil	New York
94 ,,	Dundee	Hempstead and Co	,,
52 ,,	,,	Jessup and Moore	,,
54 ,,	,,	Small and Co	,,
132 ,,	Hamburg	Salomon and Co	,,
282 ,,	Liverpool	Train, Smith & Co	Boston
208 ,,	,,	Schulz and Ruckgaber	,,
451 coils	,,	Dutton and Co	,,
18 bales	,,	,,	,,
81 ,,	,,	Butterworth and Co	,,
132 ,,	Stettin	Lewy Bros	New York

RAGS.

26 bales	Antwerp	Salomon and Co	New York
153 ,,	,,	A. Katzenstein	,,
45 ,,	,,	Jessup and Moore	,,
98 ,,	,,	Salomon and Co	,,
111 ,,	,,	Castle and Gotheil	,,
264 ,,	,,	Train, Smith & Co	Boston
22 ,,	,,	Salomon Bros	,,
28 ,,	,,	Butterworth and Co	,,
148 ,,	,,	E. P. True	,,
59 ,,	,,	Castle and Gotheil	,,
583 ,,	,,	H. Dutton and Co	,,
282 ,,	Dunkirk	Castle and Gotheil	New York
317 ,,	,,	Howland Paper Co	,,
441 ,,	,,	J. Pirnie	,,
194 ,,	Genoa	Joseph Bros	,,
24 ,,	Glasgow	Carter, Rice and Co	Boston
91 ,,	,,	To order	,,
47 ,,	Hamburg	Salomon and Co	New York
200 ,,	Hull	Castle and Gotheil	,,
168 ,,	Leghorn	Jessup and Moore	,,
192 ,,	Liverpool	Train, Smith & Co	Boston
17 ,,	,,	Schulz and Ruckgaber	,,
36 ,,	,,	Butterworth and Co	,,
62 ,,	,,	W. F. Corne	,,
170 ,,	Rotterdam	Jessup and Moore	New York
147 ,,	Stettin	,,	,,
150 ,,	,,	Lewy Bros	,,

WASTE PAPERS.

60 bales	Antwerp	Crocker, Burbank & Co	Boston
145 ,,	Glasgow	Darmstadt and Scott	,,

BLEACHING POWDER.

118 cks.	Antwerp	Fuerst Bros	New York
60 ,,	,,	F. A. Reichard	,,
60 ,,	,,	Marble and Co	Boston
452 ,,	Liverpool	J. L. and D. S. Riker	,,
31 ,,	,,	,,	Philadelphia
252 ,,	,,	,,	New York

CAUSTIC SODA.

Quantity	From	Importer	Port
50 drums	Liverpool	Hill's Son & Co	New York
100 ,,	,,	,,	Boston

SODA ASH.

2400 bgs.	Liverpool	Wing and Evans	New York
782 cks.	,,	,,	,,
200 bgs.	,,	,,	Boston
26 tcs.	,,	,,	,,
1120 bgs.	,,	To order	Philadelphia
5 tcs.	,,	,,	,,
804 pkgs	,,	,,	,,

SIZING.

5436 bgs.	Liverpool	Butterworth and Co	Boston
452 ,,	,,	Warren and Co	,,

SODA CRYSTALS.

280 bdls	Liverpool	Warren and Co	Boston

SULPHUR.

1002 bgs.	Liverpool	Linder & Meyer	Boston

SALT CAKE.

70 cks.	Liverpool	Pennsylvania Salt Co	Phildia

CHINA CLAY.

104 cks.	Fowey	Baring Bros.	Philadelphia
400 ,,	,,	To order	,,
246 bgs.	,,	,,	,,
100 cks.	,,	Moore & Munger	,,
100 tcs.	,,	,,	,,
1000 cks.	,,	Janney and Co	,,
200 ,,	Liverpool	Dunn Bros	,,

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Commercial Intelligence.

Re CHARLES WM. HARRIS,

Fancy Box Manufacturer.

At a sitting of the London Bankruptcy Court, held recently, before Mr. Registrar Hood, this debtor, trading as F. J. Harris and Co., at 14, Golden-lane, applied for an order of discharge. Mr. H. Brougham, official receiver, reported that the failure occurred in June, 1896, the trustee being Mr. Lawrence Hasluck, chartered accountant, Holborn-viaduct. The accounts showed ranking liabilities £7,544 8s. 6d., but proofs to the amount of £7,713 7s. 6d. were admitted for dividend purposes. The assets, valued by the bankrupt at £3,603 13s. 5d., realised £2,560 9s. 5d., sufficient to pay a dividend of 4s. 6½d. in the pound on the proved debts, after payment in full of the preferential claims of £343 3s. 2d. The business was established many years ago by the debtor's father, who, on his death in January, 1882, left it to the widow. The bankrupt acted as manager until the January, 1885, when he entered into partnership with his mother and a Mr. Woods. They carried on the business under the style of F. J. Harris and Co. until the end of 1891, when the partnership was dissolved, the bankrupt taking over the business, which he continued under the same style until the failure. When Mrs. Harris retired from the firm she was entitled to £3,337 in respect of her capital and money that she had advanced, and that debt was unpaid at the date of the failure. The bankrupt attributed his insolvency to insufficiency of working capital and to decline, through various causes, of the trade and profits since he took over the business at the end of 1891; also to the excessive household and personal expenses, and a loss of £450 by Stock Exchange speculations during the latter part of the trading. The accounts from 1892 to the failure, a period of four years and a half, showed that whilst the net profits only amounted to £919, the drawings and expenses were £3,369. As offences, the official receiver reported: (1) insufficiency of assets to pay 10s. in the pound to the unsecured creditors; (2) imperfect bookkeeping; (3) rash and hazardous speculation; (4) unjustifiable extravagance in living; and (5) misconduct in continuing to trade after a time when, had he carefully looked into affairs, the bankrupt would have known himself to be insolvent. His Honour upheld the report, and imposed a further suspension of three years. Order entered accordingly.

Re WILLIAM HUDSON,

Letterpress Printer.

This debtor, who carried on business at , Red Lion-street, Holborn, as Hudson id Company, attended for public examination on the 28th April, before Mr. Registrar Hood at the London Bankruptcy Court. Mr. H. Brougham, official receiver, reported that there had been some delay in the filing of the accounts, and he was consequently unable to proceed with the examination that day. By consent of all parties the hearing was adjourned for a month. The statement of affairs shows unsecured liabilities £2,786 2s. 10d.; fully secured debts, £237 (security £315); preferential claims, £50 0s. 3d.; assets, £1,159 19s. 5d.; and a deficiency of £1,676 3s. 8d. The assets comprise: cash, £2 12s. 5d.; stock in trade, £134 1s. 4d.; machinery, £500 (originally cost between £4,500 and £6,000); furniture, £35; a life policy (charged); good book debts, £407 4s. 2d.; bad and doubtful debts valued at £3 1s. 6d.; and the estimated surplus of £78 from the securities held by the fully secured creditors. The deficiency is explained by the following item, viz:—depreciation in the value of machinery, type, plant, fixtures and utensils as now estimated for realisation—£2,608 12s. 3d. The debtor, who started business in 1878 in partnership with others, attributes his failure to want of available capital, taking over the liabilites of his firm in 1895, and immediately to pressure by the executors of the widow of a former partner. Appended is a list of creditors as scheduled in the statement of affairs, viz:—

UNSECURED:—

John Dickinson and Company, London	£73
Gas, Light and Coke Company, London	17
Hurford and Taylor, London	65
Kenny and Company, London	13
E. Marler, London	23
Mrs. Moore, London	10
Spalding and Hodge, Ltd., London	39
E. Symons and Sons, London	19
Sharrow and Anderson, London	11
R. T. Tanner and Company, London	106
Dunn and Taylor, London	10
S. S. Taylor, London	2,140
Executors of Mrs. Bowden, London	183

FULLY SECURED:—

Permanent London and Westminster Building Society, London (Security valued at £150).	£76
Permanent London and Westminster Building Society, London (Security valued at £165).	161

PREFERENTIAL:—

Executors of Mrs. Bowden, London	£28
Income Tax	13
Wages	15

Re HENRY FOOTE PATTERSON,

Proprietor and Editor.

This debtor, late proprietor of the *Stockton and Middlesborough Evening Telegraph*, and previously editor and manager of the *North Star*, appeared for further examination in bankruptcy, at Stockton, last week. Replying to Mr. W. G. Simpson, deputy official receiver, debtor said he started the paper himself with £1,500, although the promoters of a previous scheme had declined to start on £9,500, a sum of £15,000 or £16,000 being required. Examination adjourned.

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Company Registrations.

"LICENSED VICTUALLERS' GAZETTE," Ltd.

Registered with a capital of £10,000, in £5 shares, to enter into agreements with the Licensed Trades Protectorate (Ltd)., W. J. Woods and B. Weekes, and to carry on the business of newspaper, magazine and book proprietors, printers and publishers, paper makers, bookbinders, booksellers, etc. The first directors (to number not less than two nor more than five) are W. J. Woods and J. Speir. Qualification, 20 shares. Remuneration, as the company may decide.

SMITH, PAXTON & CO., Ltd.

Registered with a capital of £1,000, in £1 shares, to acquire the business carried on at 54A, Cable-street, Liverpool, as Smith, Paxton and Co., and to carry on the business of stationers, printers, engravers, die sinkers, etc. Registered without articles of association.

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Registered with a capital of £5,000 in £1 shares, to adopt an agreement with E. H. Cowlishaw, and to carry on the business of cardboard and fancy box makers, stationers, printers, engravers, account-book manufacturers, etc.

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Registered with a capital of £3,000 in £1 shares, to adopt an agreement with J. H. Davies, I. Herbst, and J. H. Hudson, and to carry on the business of newspaper proprietors, printers, publishers, engravers, etc. The number of directors is to be not less than three nor more than five. The first are J. H. Davis, I. Herbst, and J. H. Hudson. Qualification, £100.

HUDSON, SCOTT and SONS, Ltd.

Registered with a capital of £130,000 in £100 shares (500 ten per cent. cumulative preference), to adopt an agreement with B. Scott and W. H. Scott, and to carry on the business of lithographers on paper, tin, or other material, printers, designers, engineers, photographers, [illegible] sinkers, stationers, etc. The signatories are:—B. Scott, Linden House, Stanwix, Carlisle, lithographer; W. H. Scott, Chatsworth-square, Carlisle, lithographer; Mrs. Louisa Scott, Red Gables, Chatsworth-square, Carlisle; Miss M. H. Scott, Linden House, Stanwix, Carlisle; H. E. Baker, Park View, Dalston-road, Carlisle, lithographer; R. Thompson, Burlington-place, Carlisle, accountant; F. N. Hepworth, 6, Strand-road, Carlisle, lithographer. The number of directors is to be not less than two nor more than five. The first are B. Scott and W. H. Scott. Qualification, £500. Remuneration as the company may fix.

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Registered with a capital of £25,000 in £1 shares, to print, publish, and carry on newspapers, journals, and books of a literary, scientific, artistic, commercial, technical, or mercantile character. The signatories are:—P. J. Haulgrove, 30, Hemingford-road, Barnsbury, clerk; G. T. Jellicoe, 226, Mansion House-chambers, E.C., agent; A. G. Hog, 79, Gracechurch-street, E.C., secretary; G. B. Shepherd, 96, Leadenhall-street, E.C., engineer; J. D. Watters, Weston Lodge, Lewin-road, Streatham, accountant; C. W. Cooper, 27, Leadenhall-street, E.C., director; F. E. Bathurst, 42, Caldervale-road, Clapham, gentleman. The number of directors is to be not less than three nor more than seven.

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THE SOCIETY OF ARTS
ON THE
Deterioration of Paper.

The following is the report of the Committee, appointed by the Society of Arts, on the deterioration of paper:—

During the present century the papermaking industry has undergone many revolutionary changes. As an industry it has grown prodigiously, and to meet the requirements of the enormously increased production a quantity of new fibrous raw materials have been introduced and have taken their place in due course as indispensable staples. The more important of these, so far as concerns this country, may be noted in chronological order, thus: esparto, in the period 1860-70; "mechanical wood" or ground wood pulp, in 1870-80; the wood celluloses, in the period 1880-90. These substances differ in chemical composition from the celluloses obtained from cotton, flax and hemp, which were the exclusive staple raw materials for papermaking up to this century; and although they are efficient substitutes in most respects, it must be admitted that time has not yet been able to pronounce a judgment upon the relative permanence of the papers made from them. There is more than a suspicion that many of them are very inferior in this important respect, and it has been the main purpose of the work of the Committee to sift the evidence upon which such suspicions have been engendered.

Papermaking as an *art*—both mechanical and chemical—has advanced in similar measure, and although a sheet of paper made to-day necessarily differs but little as a fabric from the papers of previous epochs, the auxiliary methods of treating the vegetable fibres up to the point of putting them together as a sheet of paper have been much extended and developed. It would be difficult in fact to imagine more perfect adjustments of means to the one end than those which have been evolved to meet the modern demand for paper in all its varieties.

The science of the art has advanced also; but not *pari passu*. The production of paper and its applications rest rather upon conventional adjustments than upon such principles as may properly be termed scientific. It is not to be objected to this statement that the industry gets on very well without conforming to such a view. On the other hand, there is no need to take the statement as implying any wholesale criticism of papermaking methods as unscientific.

What is intended in and by the statement will be more exactly appreciated from what follows in explanation of the main subject to which the Committee were asked to give their attention, that is the question of *standards of quality of papers*.

Paper being a fabric or structure, its qualities as such admit of more or less precise definition under such heads as—

Strength, expressed in terms of the weight or strain which it will support.

Elasticity and *Texture*, measured by elongation under strain and resistance to rubbing.

Bulk, express in the precise terms of specific gravity or weight per unit of volume.

Of not less importance than physical qualities are those which belong to paper

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a chemical substance (or mixture), these are (1), its actual composition; (2), the liability to change under whatever conditions of storage and use to which it may be subjected. Living in this age, it is impossible to resist the tendency to take these physical and chemical constants of paper into account in specific terms. Such constants have the inevitable force of scientific quantities; they must come more and more into practical consideration, and ultimately to rank as regulating the consumption, and, therefore, production of papers.

This conviction the Committee feel themselves bound to record. The forecast rests upon no prophetic insight but upon the knowledge of what has been accomplished in this direction in continental countries, and notably in Germany. Through the investigations of the Imperial Testing Institution of Berlin a scheme of testing of papers has been formulated and officially adopted, by which the chemical and physical properties of papers are brought to numerical expression. A more obviously important result is that standards of composition have been promulgated by the Institution, and being officially adopted by the Government, have exercised an important influence upon the paper trade of Germany. Other Governments have followed the lead of Germany in this matter. The committee recognising this advance have felt that they would render a service to the technical public of this country by reproducing in abstract form the whole of the official publications (reports) of the German Imperial Testing Station, so far as relates to the subject of paper. The work of abstracting these "Mittheilungen der K. K. Versuchs Anstalt" has been ably carried out by Mr. Kershaw under the direction of the Committee, and will be found embodied in this report.

It is not suggested that the standards arrived at by these investigations and adopted by the German Government will come to be recognised as regulating the English paper trade. They form an important contribution to the science of the subject and are reproduced for this their special significance. The matter must be left to adjust itself on the basis of public opinion. The Committee cannot do more than offer this contribution of material necessarily to be taken into account by the English technical public.

The more practical work of the Committee has been to formulate positive conclusions upon a subject which is perhaps only a side issue of the wider question of paper standards, viz., the question of the "Deterioration of Papers." This matter is in a somewhat nebulous position; on the one hand it is well known that papers have come down to us from the middle ages in a perfect condition of preservation; on the other there are many instances of the total destruction of books produced within quite recent years. There are not wanting those who are so influenced by this superficial antithesis, as to generalise it into a condemnation of present day papers, as compared with those of the olden times. Between this excess of zeal on the one hand, and the total refusal on the other to admit any case at all, the committee have endeavoured to arrive at a practical judgment on the question of the relative permanence of papers, which judgment should carry with it a more precise view of the qualities of papers as suited or unsuited to the special purposes for which they are required.

It may be pointed out that the narrower issue of liability to deterioration is no new subject. It is dealt with in general terms in standard treatises on the manufacture and uses of papers. Thus, in Herring's well known book "Paper and Paper-Making" [Longman's: London, 1856] pp. 97-119, it is pointed out that the unregulated use of bleaching agents has been known to occasion wholesale destruction of papers and books.

Since the period when such results, following from ignorant and careless practice, were common, there has been a great advance in the general grasp of the chemistry of the processes auxiliary to papermaking, and the Committee would make no point of such occasional damages as would arise in this direction from accidental circumstances. They have occupied themselves with the question of paper as normally produced, and under the conditions of ordinary wear and tear. The Committee have examined a number of books as practical evidence of "deterioration of paper;" some submitted by librarians in a condition of complete disintegration; some of their own selection exhibiting various grades of deterioration of the paper of which they are composed. They conclude on the evidence before them as follows:—

As to the two tendencies to deterioration of papers, these are marked—(1) by disintegration, (2) by discolouration. They are independent effects, but may be concurrent. They are notably so in papers containing mechanical wood pulp.

1. *Actual disintegration* has been brought to light in papers of all grades; from those of the best quality as regards the fibrous materials of which they are composed, *i.e.*, rag papers: also of course in those of lowest quality, *i.e.*, containing mechanical wood pulp in large proportions. The books examined had in certain cases been subject to ordinary conditions of storage and use: the effect in such cases is independent of wear and tear.* It is the result of chemical change of the fibres themselves. In other cases the damages could be traced to the effects of illuminating gas upon the atmosphere of the rooms in which the books had been stored. It may be generally concluded that all papers are liable to such extreme chemical change, *i.e.*, resulting in disintegration.

As to the causes determining such changes: in the case of the rag papers examined the effects appear to be due to acid bodies: the disintegration may be generally referred to acidity. The acids may have been present in the original paper as made: or may have resulted from reactions going on in the paper itself after making: or lastly, may have been

* It may be noted that the cases of destruction of rag papers investigated were for the most part in books produced in the period 1850-62.

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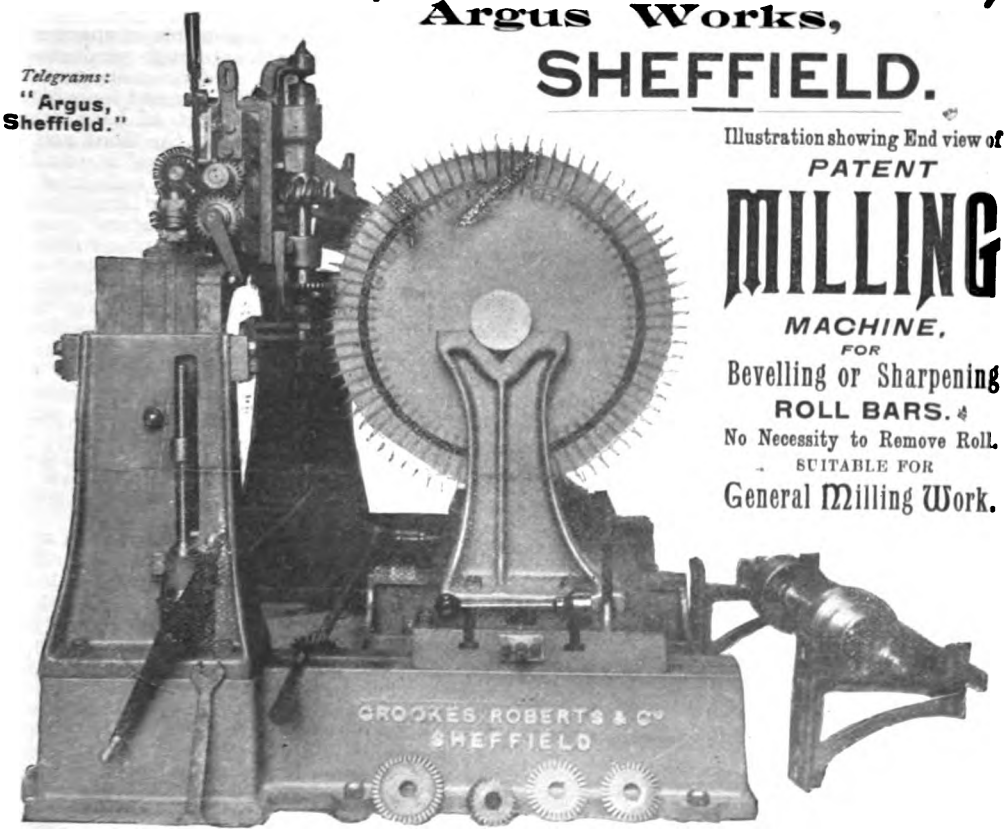

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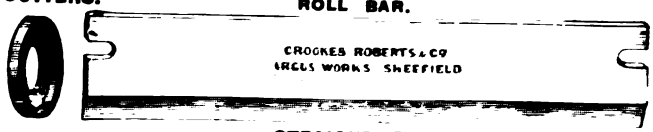

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due to products of gas combustion. In the case of mechanical wood pulp the effects are traceable to oxidation pure and simple: the disintegration is accompanied by a basic or alkaline reaction of the paper.

2. *Discolouration* may be said also to affect all papers more or less. It takes various forms: the more marked effect is a darkening of colour, which spreads inwards from the margins; but a common case is that of a uniform discolouration. The latter would be the result of changes in the paper itself; the former is determined by external agency, such as by the action of an atmosphere charged with the products of combustion of coal gas. It is a complex effect: that is, while it may be the indirect result of the action of both acids and oxidants upon the constituents of the paper, it is immediately produced by changes in products of such action; or, again, where starch is present in the paper, discolouration may arise from products which this carbo-hydrate furnishes under the action of acids.

Without discussing minutely the chemistry of the changes, the evidence obtained certainly warrants the general conclusion that discolouration of ordinary cellulose papers (as distinguished from those containing mechanical wood pulp) under usual conditions of storage is proportional to the amount of rosin which they contain, or more generally to the rosin and the conditions employed for fixing it in the ordinary process of engine-sizing.

From a consideration of certain special causes of discolouration it must be pointed out that mechanical wood pulp is stained a deep yellow by aniline and other coal-tar bases; esparto and straw celluloses similarly are stained pink, these effects being due to reactions of the fibre substances with the bases in question. Such compounds are often present in the atmosphere of chemical laboratories or where coal-tar and its products are handled. Papers containing mechanical wood pulp, or esparto, or straw celluloses, are therefore unsuitable for books likely to be used in such laboratories.

Certain practical conclusions of the Committee from the evidence obtainable are submitted. First, as regards the points common to all printing papers:

Sizing (engine-sizing).—Where the printer raises no objection, book paper should be sized with a minimum quantity of rosin. A proportion of 2 per cent. rosin (calculated dry) on the paper may be suggested as a maximum, also that for nearly all the ordinary uses of printing papers, the quality of "hard-sizing" (usually produced with large proportions of rosin), is superfluous.

The presence of *Starch* is objectionable, though, in the case of heavily-loaded papers, its employment may be necessary.

Acidity.—The papers may be finished with the normal slight excess of alum, which gives to the paper the slightly acid reaction of the alum, *i.e.*, acid to litmus, neutral to methyl orange.

Chlorides.—Care must be taken that paper should contain a minimum of chlorides.

Colour.—Upon this question it is difficult to make suggestions. It may be pointed out that high whites in papers involving the extreme grades of bleaching of the fibres are in usual practice obtained not only at the expense of strength and elasticity, but often with production of oxidised products themselves extremely susceptible of change with formation of dark-coloured products (discolouration). Such tendencies are, moreover, increased when to the demand for whiteness or purity of colour that of hard-sizing is added; and again, when the third and very usual demand for "cheapness" is considered. This necessitates the use of celluloses other than those of cotton, flax, or hemp, in which the dangers of over-bleaching are greater in proportion to the lesser chemical resistance of such celluloses, viz., the wood and esparto classes. It is true that these dangers are minimised by graduated methods of bleaching known to practical men and employed in some mills, but in ordinary practice the question of the permanence of the colour of the paper when made is not much considered. It is suggested that when very white printing papers are required, the sizing should be reduced to the practical minimum; and again, that for ordinary printing papers a lower standard of colour may be adopted with advantage.

Loading.—The addition to paper of mineral matter, such as china clay, has the effect of increasing opacity and improving texture. Up to a point it may be admitted that these advantages outweigh the disadvantages of diluting the fibrous constituents of the paper with inert and non-cohesive material. Above this point the loading of course prejudices the strength of the paper, and generally lowers the qualities of resistance. Moreover, with increase of loading, the sizing agents require to be increased, with attendant disadvantage. After careful consideration, the Committee come to the conclusion that 10 per cent. of total mineral constituents is the *extreme limit* for papers for publications of permanent value.

Texture.—This is purely a papermaker's question. It will only be pointed out here that a close and well-compacted sheet is especially necessary for printing papers. This quality is largely controlled by the mechanical process of preparation (beating) of the fibres; but this is costly, both in time and power, and as the quality is, to a certain extent, to be imitated by the addition of sizing and loading agents, the tendency is towards the latter and factitious methods. The buyer or consumer requires to bear this in mind; and in papers selected for publications of permanent value, to see that close texture has been obtained by the more "legitimate" method of mechanical preparation. The quality is a complex one; it effectually sums up the several "physical constants" dealt with above, and, until "standards" of classification are generally adopted, the question of texture must be insisted upon.

As regards the classification of papers according to composition, or more specifically, the question of the permanence of papers

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in relation to the fibres of which they are composed; this is a purely chemical problem, and the principles determining the classification have been dealt with in the Society's *Journal*, vol. xlv., pp. 690-696, 1897.

The Committee find that the practical evidence as to permanence fully confirms the classification there given, and that the papermaking fibres may be ranged in the four classes:—

A.—Cotton, flax, and hemp.

B.—Wood celluloses, (*a*) sulphite process, rather by conventional standards, the question and (*b*) soda and sulphate process.

C.—Esparto and straw celluloses.

D.—Mechanical wood pulp.

In regard, therefore, to papers for books and documents of permanent value, the selection must be taken in this order, and always with due regard to the fulfilment of the conditions of normal treatment above dealt with as common to all papers.

The Committee have been desirous of bringing their investigations to a practical conclusion in specific terms, viz., by the suggestion of standards of quality. It is evident that in the majority of cases there is little fault to find with the practical adjustments which rule the trade. They are, therefore, satisfied to limit their specific findings to the following, viz.—1st, *normal standard of quality for book papers required for publications of permanent value.* For such papers they would specify as follows:—

Fibres.—Not less than 70 per cent. of fibres of Class A.

Sizing.—Not more than 2 per cent. rosin, and finished with the normal acidity of pure alum.

Loading.—Not more than 10 per cent. total mineral matter (ash).

With regard to written documents, it must be evident that the proper materials are those of Class A., and that the paper should be pure, and sized with gelatine, and not with rosin. All imitations of high-class writing papers, which are, in fact, merely disguised printing papers, should be carefully avoided.

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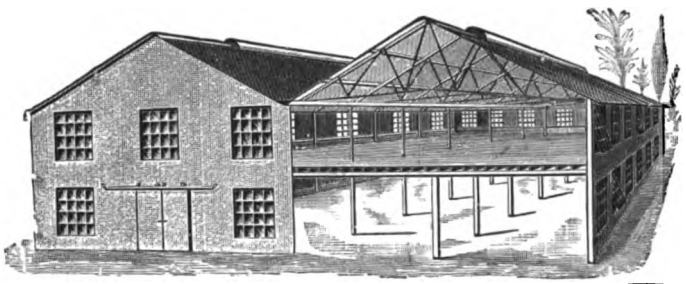

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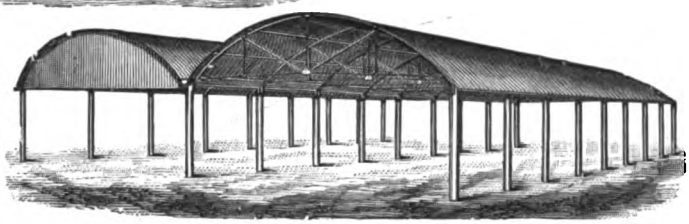

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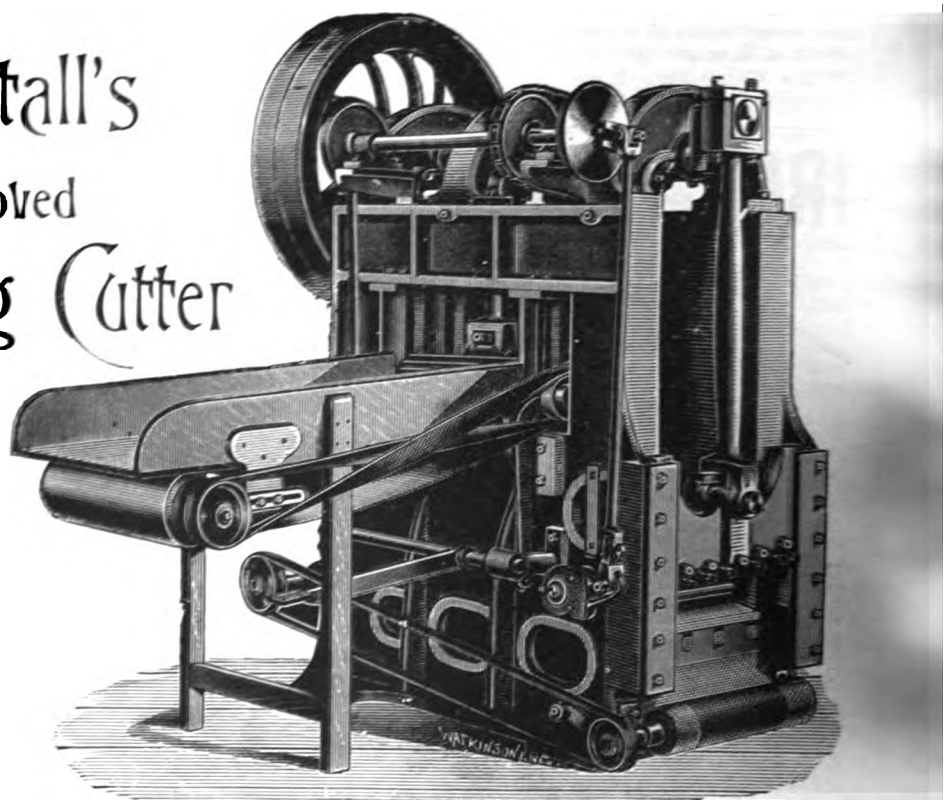

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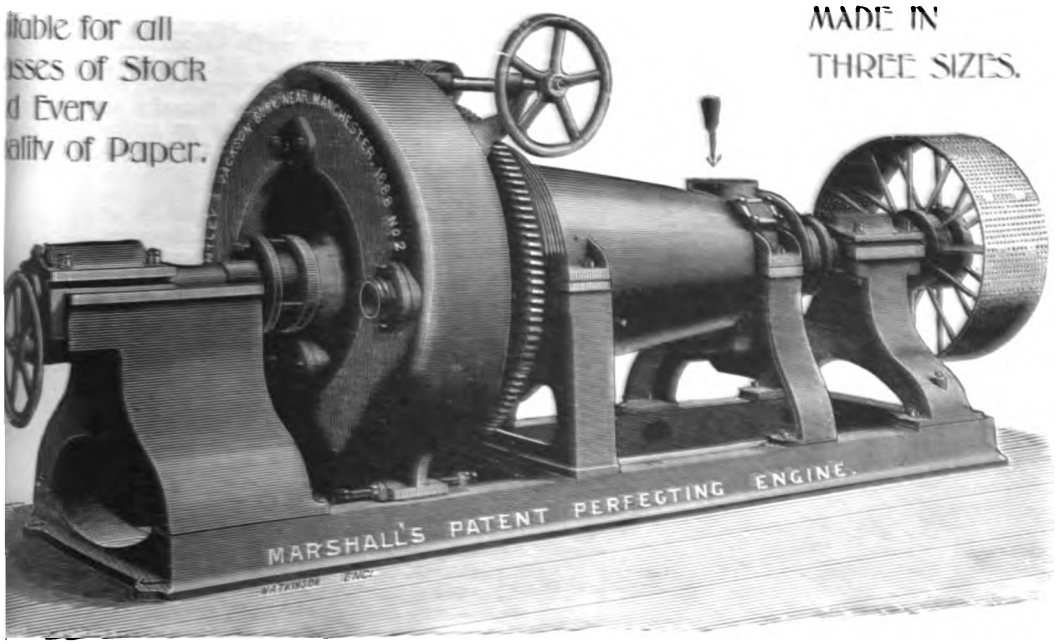

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St. Winefride's Well Litigation.

MOSTYN v. ATHERTON.

The plaintiffs in this action moved on Thursday, last week, before Mr. Justice North (sitting for Mr. Justice Romer), in the Chancery Division of the High Court of Justice, for an interim injunction to restrain the defendant, until the trial of the action or further order, from interfering with the flow of water coming from St. Winefride's Well, Holywell.

Mr. Neville, Q.C., in opening the motion on behalf of the plaintiffs, said that the difficulty had arisen through the defendant having entered into an agreement with the district council for that part of Flintshire which comprised St. Winefride's Well, commonly called Lady Well. The plaintiff, Sir Piers Mostyn, was a large landowner in the neighbourhood, and the other plaintiffs were tenants of his, some of them being paper mill owners in the district, and whose mills derived their water from the spring which supplied St. Winefride's Well. Under this agreement with the district council the defendant proposed to insert a four-inch pipe in the well, and so take a large supply of water from the well, and sell it. The plaintiffs objected to this on the ground that it would materially diminish the supply of water to their mills in the Holywell river, which supply was already inefficient. The supply of water had already been seriously diminished by drainage works in land, and the result had been, as would be shown by the evidence, to reduce the supply almost to one-half. The well was supposed to have existed since the seventh century, which was the period when St. Winefride was supposed to have flourished. The lady, it was said, was pursued by the son of a neighbouring prince, who cut off her head in this valley, and water immediately commenced to flow where the land had been dry before. The lady's head was reunited to her body, and she enjoyed good health for some 15 years afterwards.

Mr. Justice North: Or was supposed to have done.

Mr. Neville, continuing, said if the defendant was a riparian owner, having rights to the stream higher up, he still had no right to diminish the flow of water; but their case was, he was not a riparian owner at all; and, even if the district council had rights over the well, which the plaintiffs again denied, he should contend that they could not dispose of these rights to any third parties. The spring, owing to its supposed origin and curative properties, had been largely resorted to by pilgrims, who bathed in it and drank the water. This the district council proposed to stop, and the well was to be glassed in, so as to prevent the access of the public to it. With that, of course, he had nothing to do, as this action was not framed with a view to protecting the rights of the public; but whatever rights the district council might have vested in them by their Act of Parliament, he should submit they could have no right for their own purposes to interfere with the flow of water from this spring.

Mr. Rutherford, for the defendants, said their case was that the district council were not only riparian owners, but were owners in fee, having bought the well.

Mr. Neville proceeded to read the evidence, which was to the effect that the water from the well formed a stream about ten feet wide, flowing through Green Valley, until it entered the estuary of the river Dee, and for upwards of fifty years factories had existed along its banks, which used the water as a motive power.

Mr. Cozens Hardy followed Mr. Neville for the plaintiffs.

Mr. Levitt, Q.C., for the defendants, contended that the well was the property of the district council, and that therefore they could do what they liked with the water.

Mr. Justice North said that the rights to this spring were in a state of considerable obscurity, and if he thought any serious harm would be done to any person between this and the trial he would have endeavoured to have arrived at a decision. He did not, however, think it worth while to consider that question at present, as he did not think any serious damage would be sustained by anyone by allowing matters to remain as they were. He, therefore, made no order upon the motion, except that the costs should be costs in the action.

The annual report of the directors of Messrs. Brunner, Mond and Co., chemical manufacturers, of Winington, Sandbach, Middlewich, and Silvertown, was issued on Saturday. It states: "The balance-sheet and profit and loss account show a balance to the credit of profit and loss on the working of the year ended on the 31st March, 1898, of £288,422 11s. 7d., which, with the amount of £83,832 6s. 7d. brought forward makes a total of £372,254 18s. 2d. The directors propose to deal with the above balance as follows: Interim half-yearly dividend on the preference capital at 7 per cent. per annum, paid on the 6th December, 1897, £24,091 4s. 5d.; dividend to be now paid on the preference capital at 7 per cent. per annum, £24,121; interim half-yearly dividend on the ordinary capital at 20 per cent. per annum, paid on the 6th December, 1897, £96,278 2s. 1d.; dividend now paid on the ordinary capital, making 25 per cent. for the year, £144,551 10s. 2d.; amount to be written off patents' account, £1,000; balance to be carried forward £82,212 5s. 3d.; total £372,254 18s. 2d. Dividend warrants will be posted on Thursday, the 7th June. The directors have to report, with a deep sense of their loss, the death on the 18th September last of Mr. Harry Coghill, who had been a director of the company since February, 1884. The directors who retire by rotation are Mr. Crosfield, Mr. Forgan, Mr. Holland, Mr. Alfred Mond, and Mr. Schellhaas, all of whom are eligible and are recommended for re-election. The auditors retire, but are eligible for re-election."

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Canadian Wood Pulp Industry.

Mr. Ernest E. Williams, in writing under the heading of "The Imperial Heritage," in the *Windsor Magazine* for May, treats of Canada's forest wealth and the wood pulp industry.

"A most important industry," he says, "to be developed, is the manufacture of wood pulp. Already the canalising of the rapids at Sault Ste Marie has giving this industry an admirable impetus, and the new pulp mills erected hard by the docks are claimed to be the largest in the world. The strides which the pulp industry has made in recent years give promise of magnificent progress in the future. Within ten years of its small beginnings it got a capital of nearly three million dollars, and has attained to an annual output worth over a million dollars. And the quality matches the quantity. Canadian pulp has sold in England for £5 3s. 4d. a ton, when Scandinavian pulp could make no more than £4 6s. 6½d.

"Canadian pulp, also, is superior to that of the United States. For that reason, and for the futher reason that the Yankee supply of spruce is pitifully small compared with Canada's, the United States admit Canadian wood pulp free of duty. Now, when the most prectectionist and the ''cutest' nation in the world admits an article free of tariff, it is time for the nation which sends that article to commune with itself and consider the advisability of checking the export. In the present case the Dominion would be well advised in putting an export duty on pulp wood, for the manufacture of pulp and the articles therefrom is going to be a huge and profitable industry in the future, and there is no direction in which Canada's manufacturing ambitions can so well be realised as in it. 'Twould be a thousand pities, therefore, to hand it, or any large part of it, over to the Americans.

"There are three stages at which the export trade in this industry may be taken. The wood may be sent away in blocks for manufacture into pulp, or the blocks may be pulverised at home and the pulp exported, or the pulp also may be converted at home into paper or the many other articles which can be made from it. This last is the ideal stage; but in the present undeveloped state of Canadian manufacture this is only practically in a very modest degree, and if Canada were to pursue it vigorously she would only shut herself off from the profitable supplying of United States and European mills with a commodity which to them is a raw material, but to Canada is a manufacture. But she should not go to the other extreme, and ship the wood straight away from the forests to the foreign pulp factories. That she is doing this, however, may be seen from her export returns for the last few years. The value of pulp wood exported in 1892 was 219,458 dollars. By progressive stages it had reached 627,825 dollars in 1896, and the United States returns show that the rate of progress was being maintained in 1897.

"But, it is more satisfactory to learn, the export of pulp is also growing and almost doubled itself in five years. In '92 its value was 355,303 dollars; in '96 it was 675,777 dollars. (When I speak of years here I mean the Canadian fiscal years, which end on the 30th of June.)

"At present the chief use for pulp wood is the manufacture of paper, but the things which can be made from it comprise an almost indefinite list. Wood pulp is easily moulded; it is very hard, without being in the least brittle—is, indeed, practically unbreakable; it is also uninflammable. Imagine, then, the varied uses to which it can be put. It is bound to effect quite a revolution in many branches of manufacture when its uses become better known and conservative traditions are broken through. In the articles now made of earthenware, to take one instance, the use of pulp wood should in time become well-nigh universal. The manufacture of such articles in Canada has already been successfully commenced, but up to the present chiefly for home consumption; very little is exported yet. But the industry has a great future, and capitalists in search of a new field of enterprise might well turn their attention to it. The Canadian forests will feed them with all the raw material they would need, for those vast forests in Northern Ontario and Quebec of which I have been speaking are very largely composed of spruce, from which wood pulp is chiefly made. For years past a wicked waste has been going on. Mining prospectors have maliciously fired forests in order to make their work easy, Indians and trappers have fired the forests through carelessness, lumbermen have cut down saplings, and so hindered the regrowth of the wood. But, even if this present waste goes on unchecked, it will take many, many years to exhaust the spruce woods of Canada. It is to be hoped, however, and it is likely, that effective measures will be taken by the Government to check the scandalous waste, and then the supply of spruce may continue for all time."

American "News."

The demand for news paper is unabated, and (according to the New York *Paper Trade Journal*) the first call for product is held by the daily papers, so that some dealers who are supplying other trade are having difficulty in securing goods. The activity in the news market has induced mills which have been making manillas to turn their machines on to the more active grade, and this movement in turn has caused a thankful feeling among those who stick to the manilla lines and who see in the changes being made better business for themselves. The book paper men are not so happy, however, for the demand in that branch of the business has slackened up somewhat, and orders are not as plentiful as they were a month ago.

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WORLD'S PAPER TRADE REVIEW
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TRADE NOTES.

MR. ARMSTEAD, we learn, has been appointed manager at Ely Paper Works, (Messrs. Thomas Owen and Co., Ltd.). Mr. Armstead, who is held in great esteem amongst Lancashire papermakers, was for many years—in fact, since a boy—employed at the Gigg mills, Bury. With the Bury Paper Co., Ltd., he held the dual position of secretary and manager.

MR. T. T. MACKENZIE, we understand, is leaving Messrs. A. M. Peebles and Son, Ltd., to represent Messrs. Thomas Owen and Co., Ltd., in London.

MR. JAMES C. COOPER, having resigned his position with Messrs. Thin and Sinclair, of Liverpool, has opened, with the firm of Messrs. John Hudson and Co., a branch for papermakers' materials at 60, Mark-lane, London, E.C. Mr. Cooper, who is well known in the trade, will deal in wood pulp, both Scandinavian and Canadian, esparto, rosin, starches, etc.

MR. W. D. GROZIER, who has recently returned from an engagement in France, has been appointed manager of the papermaking department at Snodland paper mills. Since July of last year Mr. Grozier has been with the Societe de Pates de Cellulose de Fos-sur-Mer, instructing the workpeople in the art of manufacturing esparto pulp. The programme, at the start, was to supply French paper mills with esparto pulp, and the late M. Coupier, who was the managing director, had great hopes of the enterprise turning out a commercial success. The idea of supplying esparto pulp to French mills, apparently owing to a strong antipathy against the fibre and the high prices compared with wood pulp, etc., was soon abandoned, and a papermaking machine was installed, and Mr. Grozier then started making paper from esparto, also from French cane, some of the product containing equal proportions of the two fibres. The cane grows in abundance in the department of Bouches du Rhone, and neighbourhood. M. Eysseric is the present acting director at the Fos-sur-Mer mill.

PRESENTATION TO MR. JOSEPH TURNER.—At a smoker held at Feniscowles Hall by the employees at the Star Paper Mill, a presentation was made to Mr. Joseph Turner, the late manager of the Star Mill. It took the form of a tea and coffee service of handsome design, with the following inscription: "To Mr. Joseph Turner by the workpeople at the Star Paper Mill, Feniscowles, as a token of esteem, on the occasion of his leaving after ten years' service as manager. May 7, 1898." Mr. C. Rostron, in making the presentation to Mr. Turner, said he had very great pleasure in performing that duty. He had worked under Mr. Turner for the last ten years, and had always found him upright and straightforward in all his dealings. He had great pleasure in presenting to Mr. Turner, on behalf of the workpeople, the beautiful service. Mr. Turner, who was enthusiastically received, replied, and said it gave him great pleasure to be once more amongst them before leaving Feniscowles. He wished to thank them one and all for their splendid present. It would always remind him of the ten years spent at the Star Paper Mill, where he had always endeavoured, to the best of his ability, to serve both the shareholders and the workpeople. At the close of the concert the audience rose and gave three hearty cheers for Mr. Turner, and sang "For he's a jolly good fellow" and "Auld Lang Syne," after which Mr. Turner bade all his friends good-bye. Mr. Turner was also the recipient of a silver-mounted walking-stick and silver match case from the sorters.

RIBBLE JOINT COMMITTEE.—At the last monthly meeting of the Ribble Joint Committee, held at Preston, references in the chief inspector's report to manufacturing firms were considered, and further adjournments, ranging from two to four months, were granted. In regard to Peebles, Limited, of Whiteash, Oswaldtwistle, the clerk was directed to include the shorthand note of the decision of the House of Lords to the proceedings. Mr. Duxbury attended to explain matters with reference to a complaint against the Darwen Paper Company (Spring Vale). He said the matter complained of was the result of an accident, and measures were taken to prevent a recurrence. The company were anxious to meet the wishes of the committee. Mr. Lightbown remarked that this was one of the first companies to show a desire to comply with the wishes of the committee, and they had had very little difficulty with them since, so far as Spring Vale was concerned. It was thought that a certain pipe which passed into the bed of the river should be removed, and on the proposal of the Rev. R. C. Fletcher, the matter was adjourned for a month to enable the chief inspector to see Mr. Duxbury at the works and to report on the matter.

MR. JAMES HAMILTON, paper merchant and agent (established 1809), advises us that he has removed from 47, Waterloo-street, to larger and more convenient premises, situated at 2, West Regent-street, Glasgow. The London warehouse is at 15, Garlick-hill, Upper Thames-street, E.C.

CASTNER-KELLNER ALKALI CO., LTD.—The accounts for the period to March 31st show a credit balance of £8,677, and the directors, in their report, state that this amount, together with the profit to be made for the six months ending September 30th next, will probably be sufficient to warrant the payment of an interim dividend in October for the half-year at the rate of 8 per cent. per annum.

COMPENSATION FOR SUBSIDENCE IN THE SALT DISTRICT.—The Salt Union paid on Tuesday £2,716 in settlement of the first rate under the Compensation for Subsidence Act.

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SCANDINAVIA.

A NORWEGIAN inventor, Mr. Haere, has lately patented a process for manufacturing an imitation tapestry, having a surface resembling copper. The material used is wood pulp, and a factory for the exploitation of the process is about to be erected at Gothenburg, under the direction of an engineering expert, Count Hamilton Hellekis.

THE FRICTION PULLEY AND MACHINE WORKS, Sandy Hill, N.Y., U.S.A., have received an order from Sweden for fifteen New Success screens and five double-cylinder pulp reducers.

FRANCE.

THE depression in some sections of the papermaking industry, consequent upon over-production and the drop in prices, has been specially felt in the Department of Pas-de-Calais. It is not long since trade in this direction was considerably developed there, but it has slackened a good deal of late. There are, however, evident signs that prices will stiffen somewhat in the near future, when an improvement will no doubt manifest itself.

A RETROSPECTIVE exhibition of papermaking is being organised in Paris, and will probably be a feature of the great show of 1900; a large number of exhibits of specimens and documents bearing on the subject has been promised by different parties, and no effort is to be spared to make the thing thoroughly representative of the history of the industry, its ancient materials and methods. Among other points of interest, it is proposed to erect a full-sized reproduction of Louis Nicholas Robert's first papermaking machine, illustrated in the *World's Paper Trade Review*, for November 19th last. An offer has been made to supply such a model at cost price.

Two colonists at Crarem (Prov. of Constantine, Algeria) have lately been experimenting with aloes leaves, from the thin pellicular film covering which they claim to have made good marketable paper. The fibre is treated in the same way as rags would be, and the resulting sheets are said to be of a very close grain. Such a paper would be very refractory in presence of acids, and might be useful for a variety of industrial purposes.

GERMANY.

KEMPTEN.—The Chamber of Commerce reports that Scandinavian and American competition in the British market makes business from this district, with higher carriage, wages, &c., from year to year, more difficult. The sales have, therefore, to be in the home markets, where there are sufficient orders.

BADISCHE ANILIN UND SODA FABRIK in Ludwigs-hafen pays 24 per cent. dividend for last year against 26 per cent. in the previous year.

UNITED STATES.

MR. T. S. COOLIDGE, for the past twenty-eight years general agent for the associated lime companies of Glens Falls, has been appointed manager of transportation of the International Paper Company, with headquarters in New York.

THE CHEMICAL MARKET.—The American imports of alkali from Great Britain last month were of the low value of £16,133. For the corresponding month of last year the value was £65,081. According to the *Paper Trade Journal*, bleaching powder in the New York market continues weak. English bleach is quoted as selling at 1.75 @ 1·80 dols.; French bleach, 1·62½ dols.; German bleach, 1·62½ dols.; foreign alkali, in casks, 75c.; American alkali, 65 @ 70c.: U. A. C. caustic soda, 1·80½ dols., with the American article at 1·75 dols.

THE TARIFF OF TUNIS.—The Board of Trade have received through the Foreign Office a copy of a despatch from her Majesty's Acting Consul-General in Tunis enclosing a copy of the *Journal Officiel Tunisien* for the 3rd inst., which contains the decree establishing the new Tunisian tariff of import and export duties. The tariff can be seen on application at the Commercial Department, Board of Trade, 7, Whitehall-gardens, S.W., on any day between the hours of 11 and 5.

RE A. HENRY AND GABBOTT, York Mills, Mill-street, Ancoats, Manchester, rag and paper merchant, in bankruptcy. A dividend is intended to be declared in this matter; creditors should send in their claims by the 31st inst. to the trustee, Mr. J. T. Trotter, 27, Brazennose-street, Manchester.

MR. A. H. CHAPPEL, of 46, Queen Victoria-street, London, E.C., has, we are informed, lately been appointed sole agent for a syndicate of Canadian paper mills (five in number).

MESSRS. THORN AND HODDLE, of New Tothill-street, Victoria-street, London, S.W., have a complete installation of acetylene gas in operation at the Earls Court Exhibition. The firm make a feature of comparing the new aluminant with electric light and coal gas, and visitors have an opportunity of obtaining full information. Messrs. Thorn and Hoddle light up a portion of "Old London," near the Great Wheel. They are the sole makers of the "Incanto" generators.

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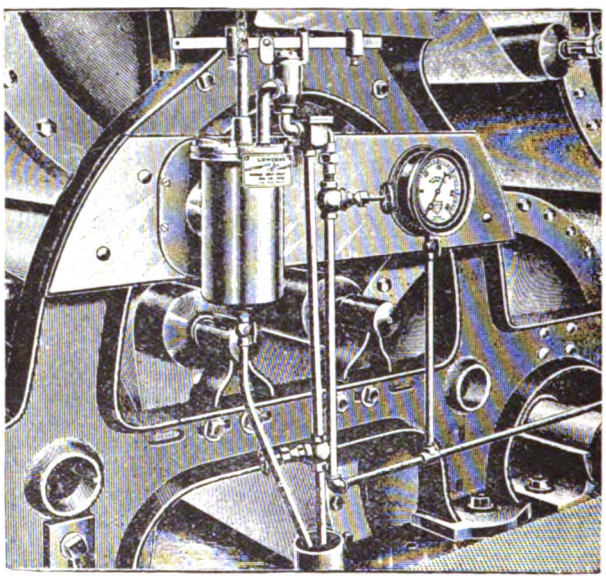
LOWDEN'S

Paper Mill Specialties.

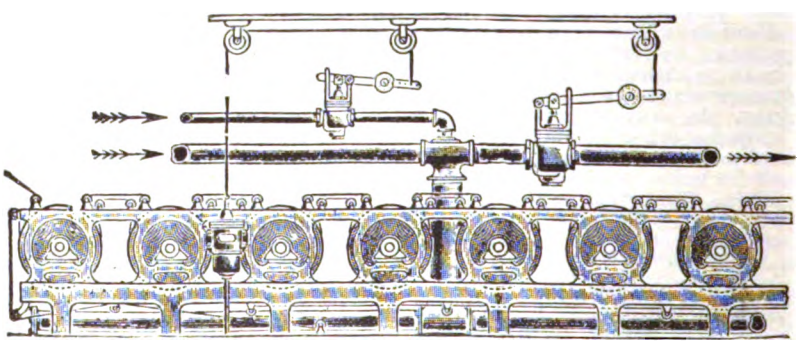
Mr. James J. Lowden, of Everett, Mass., U.S.A., is on a visit to this country in connection with various specialties, of which he is the inventor and patentee, and which, in point of economy and effective working, merit the attention of papermakers and all steam users.

Mr. Lowden, whilst in London for a few days, previous to visiting Scotland, was seen by our representative, who found that the various appliances in which Mr. Lowden is interested are not unknown in British mills. The inventor, when on a previous visit to this country, fixed one of his automatic steam regulators to one of the papermaking machines at the mills of Messrs. Alex. Cowan and Sons, Ltd., Penicuik, and orders have lately been placed for two more. Mr. Lowden has also received orders for his combined exhaust and live steam regulators for the mills of Messrs. Robert Craig and Sons, Ltd., of Airdrie, and the Clyde Paper Co., Ltd., Rutherglen. The Guardbridge Paper Co., Ltd., have ordered four of Lowden's single valve regulators, and Messrs. J. Lovell and Son, of Avon Mills, Linlithgow, have also placed an order. It is evident that the Scottish mills recognise the economical value of Mr. Lowden's inventions, which have been brought under their notice by the West End Engine Works Co., Edinburgh, the European agents. Repeat orders, too, must be considered very gratifying, as they indicate the appreciation of users.

Lowden's automatic steam-pressure regulators, and also the method of combined exhaust and live steam regulation, are very widely used by American manufacturers on their paper machines and on their



LOWDEN'S AUTOMATIC STEAM PRESSURE REGULATOR.



LOWDEN'S PATENT COMBINED EXHAUST AND LIVE STEAM REGULATION.

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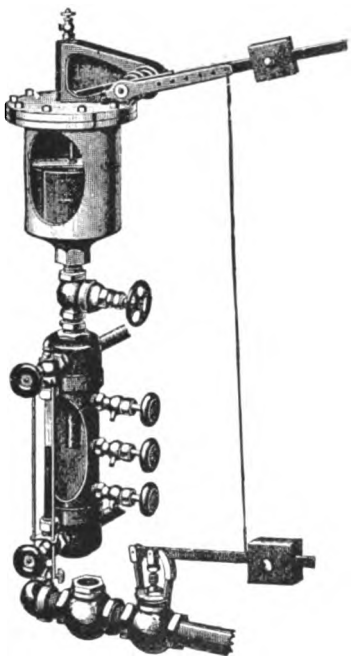
rotary bleachers. According to the particulars supplied by the inventor, the regulators can be applied to paper machines where exhaust is used, or exhaust and direct steam combined, and relieve engine from back pressure in the operation. Paper can be made with a great saving of steam; it insures uniformity of drying and freedom from water-streaks. A special advantage is in case of breaks at the press-roll, the pressure remaining same on the dryers while no paper is running over dryers, thereby maintaining an even temperature. They are always at the right temperature, when the paper is carried over, to dry the sheet exactly right for carrying through chilled rolls. No waiting, readjusting, or trouble whatever, thereby making a great saving in



LOWDEN'S AUTOMATIC BOILER-FEED REGULATOR.

amount of "broken" to be taken back to the mill. It is claimed that this regulator will do the work far more effectually than can be done by hand, and without attention, and is an absolute safeguard against explosion. Its method of operation, its extreme sensitiveness, durability, and convenience, have demonstrated its superiority over all other devices for these purposes yet introduced; and as a regulator for buildings heated by steam, it is simply perfection. Operating from the back pressure it equalises the temperature throughout the entire building at any point desired from one pound up to the full boiler pressure. We have seen a list of testimonials from users who have had Lowden's appliances in use for seven years and more with the most satisfactory results, and from the orders mentioned above, it will be seen that several of the most prominent Scottish mills are favourably impressed with the economical features claimed.

Another specialty of Mr. Lowden's to which we would direct the attention of our readers, is his boiler feed regulator. It automatically regulates the feed, so as to supply the exact amount of water that is being converted into steam, keeping the water in the boiler at an invariable fixed height under all circumstances. It secures drier steam, higher pressure, with less fuel, and great uniformity in pressure, It avoids the injurious effects produced by the unequal expansion and contraction that takes place where the height of the water in the boiler varies, and other causes, that often results in fatal explosions and accidents. It is claimed that the appliance is simple, durable, correct in principle, and absolutely perfect in operation. The well-known American papermakers, S. D. Warren and Co., of Cumberland Mills, Me., have twenty-four of these regulators in use, and the Martin and Wm. H. Nixon Paper Co., of Philadelphia, Pa., fourteen. Quite a large number of mills have eight and more in use, giving complete satisfaction.

Canadian Notes.

THE BRITISH MARKET. — The *Toronto World* says:—"It is quite evident from the condition of the paper trade in Great Britain, and from the disposition of the people of that country towards Canada, that we can get possession of the British paper markets if we only go the right way about it. Great Britain has no pulp wood of her own. She must import it all, and she would much rather import it from Canada than other countries. If circumstances are such that she must import paper instead of pulp, then she would rather import the paper from Canada than the United States or any other foreign country. Canada has in abundance the raw material which the British paper men so much desire. The latter wish to deal with us in preference to foreigners. It will be owing to the stupidity of the Government if advantage is not taken of these conditions, and if the paper trade of Canada is not benefited in a very large degree."

THE LAURENTIDE PULP CO.—Notice is published in the official *Gazette* of Canada, that under the Companies' Act, supplementary letters patent have been issued whereby the total capital stock of the Laurentide Pulp Company has been increased from 900,000 dols. to 1,200,000 dols. This is the second increase which the company has been authorised to make within a year.

THE CUSHING SULPHITE FIBRE CO., LTD., have asked for a charter to erect a sulphite pulp mill and other necessary works in connection therewith. The head office is to be at Fairville, N.B., and the provisional directors as follows:—Messrs. Jos. Allison, Wm. H. Murray, Thos. McAvity, Geo. F. Baird, Geo. S. Cushing, Geo. McKean, and James Fleming, all of St. John.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

SCANDINAVIAN manufacturers of sulphite are firm in their quotations, and in some quarters higher prices are talked of.

EFFORTS are also being made to send up the prices of Scandinavian mechanical pulps, but directly an advance is mentioned business falls through. The present quotation for dry pine is about £4 7s. 6d.

DURING last year the production of sulphite by the Storviks Aktiebolag, Storvik, Sweden, amounted to nearly 16,500 tons, of the value of about two million kroner.

A DIVIDEND of 10 per cent. has been declared by the Stora Kopparbergs Bergslags Aktiebolag, Falun, Sweden, for last year. The rate for the previous year was 9 per cent.

CONSIDERABLE inconvenience has been caused to the management of the Forshaga Sulphite Aktiebolag, Forshaga, Sweden, owing to the strike amongst the workpeople. We now understand that fresh hands have been engaged by the company. There were plenty of applicants for employment, as the liberal treatment by the company of their employees is well known.

DURING 1897, 3,463,282 cwts. of chemical and mechanical wood pulp were exported from Sweden. The quantity in the previous year was 3,540,726 cwts.

THE following report is from Mr. Vice-Consul Carrick, at Gefle:—"The export of wood pulp was scarcely so large in 1897 as in the previous year. This was entirely caused by the destruction of the Mackmyra Works by fire. These works are, however, being rebuilt on a considerably larger scale than before, and will be in full working order shortly. Otherwise, the works of the district have been fully employed at remunerative prices. It is, in point of fact, well known that this branch has been one of the most profitable in Sweden during the last five years, and although the large increase in the means of production in the north of Sweden may reduce profits in the near future, there is no doubt the possession of cheap raw material will enable the works of the district to maintain their position. The production of the district consists mostly of sulphate pulp. The Stora Kopparbergs Bergslags Aktiebolag have commenced the erection of large paper works at Avarnsveden, near Faben. They are said to have purchased two immense American paper-making machines of 107 and 127 inches respectively, as well as 18 new American turbines, developing together 12,000 horse-power for these works. British papermakers will find it hard to compete in price with a powerful company like this that manufacture paper from raw material grown in their own forests, unless they are able to acquire control of their own wood pulp supply; and it is surprising that they have not more largely invested in wood pulp works."

THE figures relating to the export of wood pulp last year from Gefle, show the quantity to be 24,114 tons, of the value of £168,147. For the previous year, viz., 1896, the quantity was 26,402 tons, of the value of £183,657 5s.

WOOD PULP was exported from Sundsvall during 1897 to the extent of 28,415 tons; the quantity during the previous year was 27,070 tons.

THE exports of wood pulp at Hernosand last year were 49,386 cwts. No figures are given for the previous year.

AT Soderham, the exports of wood pulp last year were 58,480 cwts., and for the previous year, 40,476 cwts.

THE exports at Oscarshamn last year of wet mechanical wood pulp were 70,550 kilos., a heavy reduction compared with the previous year, when the quantity was 733,250 kilos.

THE scarcity of sulphur continues to cause great uneasiness to manufacturers of sulphite in the United States.

BEFORE actual hostilities began crude brimstone, of the quality known as unmixed seconds, was sold at 22 dols. a ton. Recently 37·50 dols. was paid for a small quantity from second hands.

SOME pulp men are inclined to the belief that if sulphur becomes so scarce that the price has to be advanced to 50 dols. or over American pyrites can be used in its stead.

THERE are several deposits of pyrites in the United States, and one mill, the High Falls Sulphite Pulp and Mining Co., at Potsdam, N.Y., already mines its own pyrites and utilises the sulphur in the making of its sulphite.

THE great objection to pyrites is the cost of transportation, 1 ton of ore only yielding about 40 per cent. of sulphur.

QUOTING from a petition presented by Solon J. Vlasto to the Senate tariff committee last July, and signed by nearly all the sulphur consumers in the United States, the petition being a protest against a duty

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on crude sulphur, "the average yearly consumption is about 100,000 tons, of which 40,000 tons are consumed by the sulphite fibre manufacturers—manufacturers who cannot use pyrites."

THERE have recently been heavy shipments of sulphur from the works at Widnes to Canada, whence it finds its way to the States. The sulphur plants of the United Alkali Co. are reported to be now quite busy.

THE following are the latest arrivals of Canadian pulp at Liverpool:—From St. John: 501 bales and 1,939 rolls by the s. "Gallia," and 175 bales by the s. "Lake Ontario."

AMERICAN pulp was received at Liverpool during the past week as under:—From Portland, Me.: 292 rolls by the s. "Vancouver," and 264 rolls, by the s. "Californian."

THE largest arrival from the States for some time past was that unloaded at Manchester, from the ss. "Glendevon," referred to in our last issue. This was an entire cargo of American mechanical wood pulp, amounting to 43,740 bales.

CANADIAN sulphite has lately advanced 2 dols. per ton. Local quotations are 1·85 dols. per cwt. For shipment to the United States the price is 2 dols. per cwt. Freight and duty amount to 16 cents.

BRUCE'S PATENT FLAT STRAINER.

PAPERMAKING MACHINERY.

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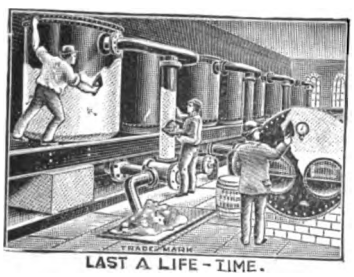

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The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

Established 1879.

Printed and Published EVERY FRIDAY by W. JOHN STONHILL, at 58, Shoe Lane, London, E.C.

Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, MAY 20, 1898.

The Deterioration of Paper.

THE disintegration and discolouration of paper has been commented upon times without number, and viewing the serious loss, owing to the deterioration, in regard to valuable printed books and important documents, the Society of Arts recently gave attention to the subject. A committee was appointed, including the following well-known names:—Major-General Sir Owen Tudor Burne, G.C.I.E., K.C.S.I. (Chairman of the Council), Sir William Anderson, K.C.B., D.C.L., F.R.S., Michael Carteighe, C. F. Cross, F.C.S., Sir John Evans, K.C.B., F.R.S., Richard Garnett, C.B., LL.D., George Clulow, Hugo Müller, Ph.D., F.R.S., William J. Russell, Ph.D., F.R.S., Henry R. Tedder, F.S.A., William Luson Thomas, R.I., Prof. J. Millar Thomson, F.R.S., Dr. Quirin Wirtz, M.A., F.I.C., and Sir Henry Trueman Wood (Secretary). We publish the report, just issued, on another page, and the various points discussed will no doubt greatly interest our readers.

* * *

The Art and Mystery of Watermarking.

MANY attempts have been made at different times to classify, historically and chronologically, the various symbols which have been used as watermarks in Europe, certainly since the fourteenth century, but most of these have failed in their object, mainly because the investigators confined their researches to a single country, or to a particular period of time. It has, however, long been considered that the different designs, many of which possess "a distinction without a difference," so to speak, could be tabulated and dated without much difficulty, if the marks used in the principal papermaking countries of the Middle Ages were collected, collated, and compared in a single homogenous and comprehensive work. Desmarets, as long ago as 1788, was of opinion that the various makers, in watermarking their paper, were guided to a large extent by the taste of the consumer. We shall probably, ere long, be in a position to test the truth of this hypothesis, as M. Briquet, a French savant, is approaching the completion of a work on watermarks, which has occupied his leisure for some years past. He has personally visited the principal private and public collections of paper MSS. and printed books in France, Switzerland, and Italy, and has obtained therefrom no less than 30,000 tracings of watermarks, which occupy a score of bulky tomes. The author is now engaged in copying in similar manner the watermarks of Germany, and hopes to complete this section in time for the Paris Exhibition of 1900. It seems likely that the result of his labours will be shown there, as M. Briquet has given his consent to this, only stipulating that the volumes be placed in glass cases, and not allowed to be handled by the general public, except under the surveillance of a member of the Committee.

* * *

The Workmen's Compensation Act.

This Act, which comes into force on the 1st of July next, is a most stringent one as affecting employers. Its importance to employees also makes it necessary for the provisions to be thoroughly understood. The scope of the Act is limited to certain kinds of employment. It applies, however, to "a factory," a term which practically includes every place or building on which any machinery actuated by steam, water, electricity, or other mechanical power is used for any manufacturing or similar purpose. The insurance companies have lately been busy formulating rates for various industries, and it appears that the associated group of offices have arranged rates, which represent about 25s. for paper mills, 15s. for paper stainers, 30s. for engineers (shop only) and 45s. (outside ordinary), 15s. for printers, 15s. for bookbinders, and 20s. for paper-box and bag makers. These rates are subject to discount

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
BELGIUM	1822	25	—
CHINA	—	9	—
DENMARK	21	—	—
FRANCE	609	—	—
FINLAND	—	13	—
GERMANY	2276	19	243
HOLLAND	22288	9	—
NORWAY	691	—	—
SWEDEN	5732	—	—
U.S.A.	2527	144	512

Including the Following:—

Quantity	From	Importer	Port
151 bales	Gothenburg	Schenkenwald & Co	London
44 ,,	,,	Relph & Co	,,
303 ,,	,,	C. Poulter	,,
10 ,,	,,	Reed & Co	,,
32 ,,	,,	Becker & Wagner	,,
179 ,,	,,	J. Eberstein & Co	,,
53 ,,	,,	Cookson & Co	,,
5 ,,	,,	E. Lloyd	,,
8 ,,	,,	J. Spicer & Son	,,
46 ,,	,,	Alsing & Co	,,
15 ,,	,,	E. Sabel & Co	,,
209 ,,	,,	R. L. Lundgren	,,
35 ,,	,,	Brough & Co	,,
203 ,,	Norrkoping	Schenkenwald	,,
260 ,,	,,	Skarblacka	,,
177 ,,	,,	J. Eberstein	,,
45 ,,	,,	J. Spicer & Sons	,,
1238 ,,	,,	Skarblacka & Co	,,
62 ,,	Stockholm	M D Co	,,
12 ,,	,,	Peabody & Co	,,
12 ,,	,,	E. Major	,,
17 ,,	,,	C. Davidson & Co	,,
393 ,,	,,	Schenkenwald	,,
28 ,,	,,	British Pearl Co	,,
8 ,,	,,	Cookson McDonald and Co	,,
4 ,,	,,	A. Rosedale, Son & Co	,,
347 ,,	Uddevalla	D. Gulland	,,
53 ,,	,,	R. L. Lundgren	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	5203	606	526
AFRICA	72	246	26
ARGENTINE .. .	71	20	63
BELGIUM	13	42	6
BRAZIL	—	63	—
B. GUIANA	25	-	—
CAPE COLONY	—	23	16
CANADA	—	80	—
CHINA	43	72	75
CHANNEL ISLES ...	—	—	35
DENMARK	—	—	20
EGYPT	—	—	2
FRANCE	382	37	33
GIBRALTAR	—	—	35
GERMANY	—	22	—
HOLLAND	65	—	31
INDIA	262	274	67
JAPAN	65	47	25
MALTA	—	—	6
MAURITIUS	—	—	15
NEW ZEALAND	567	335	533
PORTUGAL	46	4	—
SPAIN	85	36	8
SWEDEN	—	—	14
S. SETTLEMENTS ...	10	—	—
TURKEY	—	4	9
U.S.A.	43	202	—
W. INDIES	—	21	307

FROM GLASGOW.

AUSTRALASIA	2851	1826	114
BORNEO	—	—	22
CANADA	—	38	—
CHINA	200	—	—
HOLLAND	—	—	3
INDIA	15	62	28
NORWAY	28	—	4

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

571 b	Cologne	London	282 b	Copenhagen	Hull
1938 ,,	Amsterdam	,,	855 ,,	Rotterdam	Bristol
4480 ,,	Rotterdam	Manchstr	1968 ,,	,,	Liverpool
596 ,,	New York	,,			

WOOD PULP BOARDS.

40 b	Hambro	Grangemth	10 c	Malmo	Hull
751 ,,	Lubeck	London	14 ,,	Hambro	Manchester
35 ,,	Boston	,,	200 ,,	New York	,,
34 ,,	Hambro	,,	593 ,,	Stettin	,,
26 c	Gothenburg	Granton			

MILLBOARDS.

21 b	Hambro	Goole	3828 b	Delfyzl	Goole
5935 ,,	Harlingen	Hull			

PASTEBOARDS.

18 c	Hambro	London	1 b	Rotterdam	Grngmth
431 ,,	Rotterdam	,,	120 ,,	Hambro	Leith
196 ,,	New York	,,	3890 ,,	Harlingen	,,

b—bales. c—cases. r—rolls. cr—crates.

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IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

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WANTED immediately, thoroughly reliable Man, accustomed to working Wide Super Calenders.—Apply, Olive Brothers, Limited, Woolfold Paper Mills, Bury, Lancs. 7284

WANTED, a Practical MANAGER for a three-machine paper mill making Fine News and Printings.—Apply, stating experience and salary required, to No. 7,281, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7281

Situations Wanted.

AS TOWN TRAVELLER.—Wanted by a paper mill manager of great experience a position as Traveller with wholesale stationer, agent, or to represent a mill. Practical knowledge of all classes of white and coloured papers. Active business habits; good references; age 40.—Address, 7,277, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7277

FOREIGN GENTLEMAN, well acquainted with the Scandinavian and Continental market, and with eleven years' London wholesale experience, is open for a Re-engagement as Bookkeeper, Correspondent, or Traveller. Highest references.—Address, E.C.T., No. 7,280, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7280

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

MANAGER now open to Re-engagement; 15 years' experience as such in first class mills. Good papermaker, with thorough knowlege of rags, esparto, and wood pulps; experience of limited companies, and used to entire control. Active and energetic; age 42; good references.—Address, No. 7,278, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7278

WANTED, Re-engagement as Manager or Foreman, in mill making tub-sized writing papers; used to all qualities and modern methods of manufacture. Age 44; active and energetic; good references as to character and ability from first-class mills.—Address, No. 7,271, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7271

Machinery.

ONE REVOLVING BOILER, 18 feet long, 8-ft. diameter, made of $\frac{7}{16}$ and $\frac{1}{2}$-in. best boiler plates. Almost as good as new.

ONE REVOLVING RAG DUSTER, 4-ft. 6-in. diameter, 12 feet long; with driving gear complete. In good condition.

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WANTED, a Second-hand Engine, 6-h.p. nominal, vertical or horizontal; in good condition and by a standard maker —Replies to be addressed to No. 7,285, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 7285

Miscellaneous.

FOR SALE.—Brown Paper Mill in Scotland; 64-inch machine, steam and water power.—Particulars on application to No. 302, Keith and Co., Advertising Agents. Edinburgh. 7276

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JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

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NOTICE of REMOVAL.

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LIVERPOOL	GOOLE	DOVER	GRANGEMOUTH
MANCHESTER	GRIMSBY	FOLKESTONE	DUNDEE
RUNCORN	BRISTOL	GLASGOW	BONESS
FLEETWOOD	HULL	GREENOCK	Etc., Etc.
PRESTON	SOUTHAMPTON	LEITH	

For the Week ending Tuesday last.

FROM SPECIAL SOURCES AND TELEGRAMS.

CHEMICALS.—There is a fair demand for home consumption, but exports to the United States show a serious depreciation. BLEACHING POWDER is dull at £5 5s. to £5 10s. per ton soft wood casks on rails. AMMONIA ALKALI 58 per cent. is quoted £4 2s. 6d. to £4 5s. on rails, and SODA ASH 58 per cent. £4 12s. 6d. to £4 17s. 6d. f.o.b. Liverpool. Competition amongst makers of CAUSTIC SODA is very keen. White 77-78 per cent. standing at from £8 5s. to £8 10s. and 70 per cent. £7 to £7 5s. There is a good demand for RECOVERED SULPHUR, which is quoted £5 to £5 5s. per ton on rails. SALT CAKE stands at 21s. to 22s. ALUM is without change.

Quotations are nominally as follows:—

Alkali, Ammonia, 58%	...	f.o.b. Liverpool		£4	5 0
,, ,, 48%	...	,, ,,		4	0 0
Alum (Ground), tierces	...	,, ,,	2½%	5	5 0
,, barrels	...	,, ,,	2½%	5	15 0
,, tierces	...	,, Hull	2½%	5	2 6
,, ,,	...	f.o.b. Glasgow	2½%	5	5 0
,, (Lump) ,,	...	f.o.b. Liverpool	2½%	4	12 6
,, barrels	...	,, ,,	2½%	4	15 0
,, tierces	...	,, Hull	2½%	4	12 6
,, ,,	...	London	2½%	5	2 6
,, ,,	...	f.a.s. Glasgow	2½%	4	12 6
Alumina Sulphate ...	...	f.o.b. Tyne	net	3	11 3
Aluminoferric Cake, slabs	...	Liverpool		2	15 0
,, tierces		,,		3	2 6
Alumina Cake, slabs...	...	Glasgow		2	10 0
Blanc Fixe	...	f.o.b. Tyne	net	6	15 0
Bleach	...	,, ,,	net	6	0 0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5 0
,, (hard wood)	...	f.o.b. Liverpool	net	6	0 0
,, (soft wood)	...	landed London	net	6	5 0
Borax (crystals)	...	... ...	net	14	0 0
,, (powdered)	...	... ...	net	14	10 0
Chloride of Barium	...	f.o.b. Tyne	net	6	12 6
Caustic White, 76%	...	,, Liverpool	net	8	7 6
,, ,, 74%	...	,, ,,	net	8	2 6
,, ,, 70%	...	,, ,,	net	7	10 0
,, ,, 70%	...	f.o.r. Lancs.	net	7	7 6
,, ,, 60%	...	f.o.b. Liverpool	net	6	10 0
,, Cream, 60%	...	f.o.r. Lancs.	net	5	15 0
,, ,, 60%	...	f.o.b. Liverpool	net	5	17 6
,, Bottoms, 60—62%	...	f.o.r. Lancs.	net	4	12 6
Soda Ash, Carbonated, 58%	...	f.o.b. Liverpool	net	4	15 0
,, ,, 48%	...	,, ,,	net	4	12 6
,, ,, 58%	...	f.o.r. Widnes	net	4	10 0
,, ,, 48%	...	,, ,,	net	4	5 0
,, Caustic, 48%	...	f.o.b. Liverpool		4	12 6
,, ,, 57-58%	...	,, ,,		4	17 6
Hypo-Sulphite of Soda (10 ton lots)	...	f.o.r. Tyne		4	15 0
,,		ex ship Liverp'l	net	5	0 0
Oxalic Acid	...	f.o.b. Liverp'l	3½%	per lb.	3
Salt Cake	...	on rail, in bulk		1	0 0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35	0 0
,, (2nds)	...	,, ,,		33	0 0
Soda Crystals ...	...	,, Tyne	net	2	17 6
,, ...	...	ex ship Thames	2½%	2	17 6
,, ...	...	f.o.b. Liverpool	5%	3	0 0
Sulphur, rolls ...	...	f.a.s. works	2½%	6	5 0
,, flowers ...	...	,, ,,	2½%	7	5 0
,, recovered ...	...	,, ,,	2½%	5	0 0
Sulphate of Ammonia ...	...	,, ,,	2½%	8	10 0
,, Copper ...	...	,, Liverpool	5%	16	10 0
FOREIGN.—*F.o.b. Continental Ports:*					
Hypo-Sulphite of Soda, 10-ton lots casks ...	...			4	10 0
Sulphate of Alumina, 7-8 cwt. casks net c.i.f. L'd'n				3	15 0
Blanc Fixe (c.i.f. London)	...			7	0 0
White Sugar of Lead	...			26 0	0—27 0 0
Zinc Oxide	...			19	5 0
Bleaching Powder	...			5	15 0

CHEMICAL WOOD PULPS.—There is a good enquiry for SULPHITE and prices are well maintained. The scarcity of sulphur is causing some anxiety amongst manufacturers in the United States. Reports from Scandianavia mention American enquiry for wood pulp. Very little chemical has been exported to New York during the present year, the various lots being 350 tons from Bordeaux, 95 tons from Hull, 75 tons from Copenhagen, 35 tons from Stettin and 15 tons from Rotterdam. SODA pulps are steady.

GREAT BRITAIN.

Prices, ex steamer, East Coast, are nominally as follows:—

Sulphite, Unbleached, Common	...£8 12 6	—	9 0 0
,, Superior	... 9 5 0	—	9 10 0
,, Bleached	...11 10 0	—	15 0 0
Soda, Unbleached, Common ...	... 8 5 0	—	8 10 0
,, Extra... ...	... 8 15 0	—	9 5 0
,, Bleached	...10 10 0	—	12 0 0

SCANDINAVIA.

Sulphite, Prime, f.o.b.			Kr. 160
Sulphate, f.o.b.	Kr. 120	—	Kr. 140

FRANCE.

C.i.f. Rouen per 100 kilos. (2 *cwt.*).

Bisulphite, Unbleached, dry, 1st quality	Frs. 22.75	—	23.5
,, Bleached	33	—	36
Soda and Sulphate, Unbleached, 1st quality...	21	—	22
,, ,, 2nd quality...	19	—	19.50
,, ,, Bleached ...	27	—	34

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UNITED STATES.

Sulphite, American, Unbleached ...	$1¼ — 2
,, Foreign, Bleached	3.15 — 3.50
Soda, American, Bleached	1.90 — 2.10
,, Foreign, ,, ...	2.70 — 2.80
,, ,, Unbleached	2.10 — 2.15

MECHANICAL WOOD PULP.—Scandinavian mills are firm in their quotations, and in some cases higher prices are being asked. Buyers, however, are slow to respond.

GREAT BRITAIN.

Quotations, ex steamer, East Coast, are nominally as follows:

Aspen, dry	£6 10 0
Pine, dry	£4 8 9—4 12 6
,, moist	2 5 0—2 7 6
Brown, dry	4 15 0
,, moist	2 10 0

FRANCE.

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos. (2 cwt.).

Pine, 50% moisture, ordinary	Frs. 9.50—10.50
,, ,, fine	11 —12
,, dry, ordinary...	10.50—11
,, ,, fine	11 —12
Aspen ,, fine	15 —16.50
Brown (half-chemical), 50% moisture ...	10.75—11.25
,, ,, dry	11.75—12.25

UNITED STATES.

F.o.b. Mill, nearest port (per 2,000 lbs.)... 13 dols.

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
513 bales	Ghent		London
400 ,,	Skien	E. Lloyd Ltd	,,
500 ,,	,,	Becker & Co	,,
3009 ,,	Kragero	,,	,,
88 brls.	Ghent		,,
3058 bales	Ternuzen		,,
73 ,,	Amsterdam		,,
510 ,,	Stettin		,,
120 ,,	Hambro		,,
97 ,,	Rotterdam		,,
76 brls.	Ghent		,,
650 bales	Gothenburg		,,
250 ,,	,,	A. H. Keep	,,
680 ,,	,,	Ronaldson and Co	,,
14 ,,	,,	Spicer and Son	,,
91 ,,	,,	Green and Co	,,
1939 rolls	St. John		Liverpool
673 bales	,,		,,
153 ,,	Rotterdam		,,
556 rolls	Portland		,,
2073 bales	Drontheim		Hull
110 ,,	Bergen		,,
903 ,,	Gothenburg		,,
1528 ,,	Christiania		,,
400 ,,	Christiansand		,,
200 ,,	Oporto		,,
157 ,,	Abo		,,
59 ,,	Rotterdam		Manchester
1000 ,,	Hamburg		Grangemouth
3071 ,,	Skutskar	Henderson, Craig & Co	,,
100 ,,	Oporto		Leith
11 ,,	Rotterdam		,,
240 ,,	Copenhagen		,,
300 ,,	Drontheim		,,
312 ,,	Gothenberg		Granton
80 ,,	Ghent		Goole

Totals of Wood Pulp from Each Country:

BELGIUM ...	593 bales	GERMANY ...	1630 bales
,, ...	161 brls.	HOLLAND ...	3410 ,,
CANADA ...	676 bales	NORWAY ...	8311 ,,
,, ...	1939 rolls	PORTUGAL...	320 ,,
DENMARK ...	240 bales	SWEDEN ...	6011 ,,
FINLAND ...	157 ,,	U.S.A.	556 rolls

STRAW PULPS.—Business steady.

Prices, c.i.f. London, Hull, or Leith:

German, dry, No. 1	£14 0 0
,, No. 2	13 0 0

STRAW.—Prices:

Oat, c.i.f. London ..	£1 17 0	F.o.r. Goole ...	£1 17 6
Wheat ,, ..	1 17 0	,, ...	1 17 0
Rye ,, ...	2 10 6	,, ...	2 10 6

ESPARTO.—The market is quiet, but all quotations are firmly maintained and those of Spanish are only nominal as sellers of new crop abstain from making further offers. Freights are very high and steamers scarce.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston, and Tyne Docks, are nominally as follows:

Spanish—	Fair to Good	£4 17 6—5 5 0
	Fine to Best	5 10 0—5 15 0
Oran—	Fair to Good	2 17 6—3 0 0
	First Quality	3 5 0—3 7 6
Tripoli—	Hand-Picked	3 0 0—3 2 6
	Fair Average	2 15 0—2 17 6
Bona and Philippeville ...	... ...	3 5 0—3 17 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
860 tons	Alicante	Morris and Co	Dundee
540 ,,	Oran	,,	Newcastle

HOME RAGS.—Reports from London, Bristol, Manchester, Edinburgh and Dublin, state that there is a good demand for most grades and that stocks are small.

LONDON.

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/9
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London) ...	17/0-17/6	,, No. 3 ...	5/0
Outshots (selected)	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary)	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country ,,	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country ,, ...	2/0	Gunny	2/0-2/3

BRISTOL.

Fines	16/0	Clean Canvas ...	14/0
Outshots	9/6	Second ,, ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging ...	2/6	Tarred Manilla ...	6/0

MANCHESTER.

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares ...	2/6-3/0

EDINBURGH.

Superfines	15/0	W. Manilla Rope	7/0
Outshots	12/0	Tarred Manilla Rope ...	5/6
Mixed Fines ...	14/0	,, Hemp Rope	8/0
Common Seconds	7/0	Rope Ends (new)	6/0
First ,,	10/0	,, ,, (old)	4/0
Prints	5/0	Bagging	2/3
Canvas (best) ...	15/0	,, (clean) ...	3/0-4/0
,, 2nd ...	8/0		
Black Cottons ...	2/6		

GLASGOW.

Fines	12/6-16/0	Canvas No. 1 ...	15/0
Blues	4/6	,, No. 2 ...	10/0
Common Blues ...	3/3	Manilla Rope ...	8/0
Bagging	4/0	Tarred Hemp ...	9/0

DUBLIN.

White Cuttings ...	16/0	Mill Bagging ...	2/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp ...	6/0
Light Prints ...	2/6	Rigging	10/0
Black ,, ...	1/6		

WASTE PAPERS.—Moderate demand; prices firm.

Cream Shavings ...	10/0	Small Letters... ...	3/3
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns ...	3/3
White Waste	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets	3/0
Blue Paper	2/0	Strawboard Cuttings	1/0
Crushed News ...	2/0	Jacquards	2/6

For Export: 25s. per ton extra.

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FOREIGN RAGS.—There is a better enquiry for Foreign Rags; shipments from France and Belgium to Great Britain show an improvement. The week's imports at British ports were as under:

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
382	Copenhagen	Hull	40	Dunkirk	Goole
178	Ghent	,,	161	Hambro	,,
314	Konigsberg	,,	255	Rotterdam	Grimsby
81	Bordeaux	,,	121	Antwerp	,,
45	Harlingen	,,	405	Dieppe	,,
52	Hambro	,,	414	Ghent	Leith
236	Bremen	,,	28	Rotterdam	,,
117	Amsterdam	,,	42	Dunkirk	,,
68	Dunkirk	,,	2	Stettin	,,
70	Boulogne	London	68	Amsterdam	,,
13	Rotterdam	,,	41	Copenhagen	,,
43	Amsterdam	,,	50	Jersey	Southamptn
95	Rouen	,,	50	St. Malo	,,
199	Ghent	,,	6	Boston	Liverpool
37	Antwerp	Goole	2	Barcelona	,,
194	Ghent	,,	463	Alexandra	,,
116	Boulogne	,,	135	Amsterdam	Bristol
35	Amsterdam	,,	25	Ghent	Manchester
47	Rotterdam	,,	38	La Pallice	Newhvn

Totals from Each Country:

BELGIUM ...	1088 bales	GERMANY ...	531 bales
CHANNEL Isles	50 ,,	HOLLAND ...	786 ,,
DENMARK ...	423 ,,	PRUSSIA ...	314 ,,
EGYPT	463 ,,	SPAIN ...	2 ,,
FRANCE ...	1566 ,,	U.S.A.	6 ,,

FRENCH.

Ex-ship London; Liverpool, Hull, 7/6 extra; Manchester, Bristol, Leith, 10/0 extra.

French Linens, I ...	21 0	Black Cotton	2 0
II 15/6; III	9 6	Blue Linen	7 6
White Cottons, I ...	15 6	New Light Prints ...	16 0
II 12/0; III	8 9	New White Cuttings	20 0
Coloured Cotton ...	3 6	,, Stay	15 0

BELGIAN.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6; Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens, No. 1	21 0	House Cloths... ...	2 9
,, ,, No. 2	16 0	Old Bagging (solid)...	3 0
,, ,, No. 3	12/0	,, ,, (common)	2 6
Fines (Mixed)	12/0	NEW.	
Grey Linens (strong)	9/6	White & Cream Linens	35 0
,, (extra)	14/0	White Cuttings ...	22 0
Blue Linens	8/0	Unbleached Cuttings	21 0
White Cottons No. 1...	18 0	Print Cuttings... ...	8 0
,, No. 2...	15/0	FLAX AND HEMP WASTE.	
Outshots No. 3... ...	10/0	Flax Waste, washed	
Seconds No. 4	8/0	and dried	10 0
Prints (Light)... ...	8 6	Fair	8 0
Fustians (Light) ...	4 0	Flax Card Waste ...	6 0
Fustians (Dark) ...	3 0	Hemp Waste, No. 1...	8 0
Black Cottons	3 0	,, ,, No. 2 ...	3 0
Hemp Strings (unt'r'd)	2 3		

DUTCH.

F.o.r. Hull or Goole: 2/6 per ton extra London and Leith: 7/6 Liverpool: 12/6 Manchester.

Whites, No. 1 ...	14/0	Mixed Hemp Rope	
,, No. 2... ...	9/9	Coils...	8/0
,, No. 3... ...	6/3	Broken (in bags) ...	6/0
Grey Linens	9/0	W. Manilla Rope (coils)	7/3
Clean House Cloth ...	3/0	do. Tarred ,, ...	4/9
Mixed Fustians ...	3/0	Canvas No. 1	14/3
Coloured Prints ...	2 7½	,, No. 2	9/9
Dark Prints	2 1½	,, No. 3	6/3
Blue Cottons	5/0	W. Untarred Rope ...	9/3
Light Lilac Cottons	7/0	Paper Shavings ...	5/0
		Free from wood ...	7/0

GERMAN.

HAMBURG: *F.o.b.*

NWC	19 0	LFX Second ditto ...	7/0
SPFFF	18 0	CSPFFF	14 0
SPFFF and SPFF ...	17/0	CSPFF	10 0
SPFF	14 0	CFB	6/0
SPF	11 0	Dark Blues (selected)	11 0
CCC	5/0	Wool Tares	8/0
CFX	4/0	Jute, No. I., 6/0: No.	
White Rope	6/0	II.	5/0
CF Grey Linens ...	8/0		

STETTIN: *C.i.f. Hull, Leith, Tyne and London.*

SPFFF and SPFF	17/0	LFB (blue)	4 0
SPF	11 0	CSPFFF	10 0
FF	8 0	CSPFF	16 0
FG	8 6	CFB (blue)	6 0
FFX	7 0	CFX (coloured) ...	4 0

PRUSSIAN.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (cotton)	4 6
SPF	12/6	Jute I	3 0
FG	10 0	,, II	2 0
LFB	8 0	Rope I	8 0
FF	5 6	,, II	6 0

NORWEGIAN.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred)	8 3-9 0	2nd Canvas	7 0
2nd ,, ,, ...	5 6-6 0	Jute Bagging	
Manilla Rope (white)	7 9-8 9	Gunny	3 6-5-0
Best Canvas ...	11 9-12 0	Mixed	2 6-2 9

TURKISH.

F.o.b. Constantinople, Smyrna, and Salonica.

1st White Cottons* ...	2 6	Sail Cloth or Canvas	5 0
2nd ,, ,, ...	2 6	Rope, Thick	6 0
Blue Cottons	1 3	,, Small	4 6
Coloured ,, ...	1 3		

*3/0 at Smyrna and Salonica.

JUTE.—Prices:

Good White	£15 0 0—16 10 0
Good	13 0 0—14 10 0
Medium	10 0 0—12 10 0
Common	7 0 0— 9 0 0
Rejections	6 10 0— 8 10 0
Cuttings	3 0 0— 4 0 0

STARCH.—Market firm.

F.o.r. London, less 2½%:

Maize—	Crisp	£9 10 0
	Pearl	8 5 0
	Powder	8 0 0
	Special	14 0 0
Farina—	Prime	12 0 0
	B.K.M.F.	14 0 0

Delivered, less 2½%:

Rice—	Special (in chests)	19 0 0
	Crystal (in bags)	18 10 0
	Granulated (in bags)	17 10 0
Dextrine		16 0 0

SIZING.—There is a good home and foreign demand; stocks very small.

English Gelatine	Per cwt.	£4 10 0—6 0 0
Foreign ,, ...	,,	3 10 0—5 0 0
Fine Scotch Glues	,,	2 5 0—3 0 0
Best Long Scotch Glues ...	,,	2 0 0—3 0 0
Common Black	,,	1 5 0—1 8 0
"Town" Glues	,,	1 18 0—2 5 0
"Bone" Glues	,,	1 6 0—1 10 0
Foreign Glues	,,	1 8 0—1 15 0
Bone Size	,,	5 6— 10 0
Gelatine Size	,,	6 6— 10 0
Dry B.A. Pieces	,,	2 10 0—2 15 0
,, English Pieces	,,	1 15 0—2 5 0
Wet ,, ,, ...	,,	8 6— 9 0
,, Sheep Pieces	,,	3 0— 4 0
Buffalo Hide Shavings ...	,,	1 12 0—2 0 0
,, Picker Waste	,,	1 12 0—1 15 0

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
5/0	5/3	5/6	5/9	6/3	6/9	7/0	7/6	8/0	8/9	9/6

METALS.—LONDON: The demand for COPPER flat; TIN in better request; LEAD firmer. Tuesday's official closing prices:—

Copper—		
G.M.B., cash	£51 8	9—51 13 9
,, three months	51 15	0—52 0 0
Tough	54 5	0—55 0 0
Best selected	55 0	0—56 0 0
Strong Sheet	62 0	0—
Tin—		
Fine foreign, cash	66 6	3—66 16 3
,, three months... ...	65 18	9—66 8 9
Lead—		
Spanish		13 17 6
English	14 0	0—14 2 6

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COLOURS.—Business quiet.

Mineral Black	Per Cwt.	£0	3 0
,, (Superior)	,,	0	4 6
Ivory Black (Pure)	,,	0	12 0
Ochre	,,	0	2 3
French (J. C. Ochre)	Per Ton	3	0 0
Chrome (Pure)	Per Cwt.	2	0 0
Red Oxide	,,	0	4 6
Umber (Devonshire)	,,	2	10 0
,, (Turkish)	,,	2	0 0
Lamp Black	,,	0	5 0
Ultramarine (Pure)	,,	1	15 0
Cochineal	Per lb.	0	1 3

PASTE COLOURS, with 60% of Colour: (less 2½% d/d.)

Orange Pulp	Per Cwt.	2	0 0
Golden Yellow Pulp	,,	1	10 0
Lemon Yellow Pulp	,,	1	10 0
Prussian Yellow	,,	1	16 0
Green (free from Arsenic)	,,	1	16 0
Paste Blue, 20%	,,	0	18 0
,, 33%	,,	1	6 0
,, 45%	,,	2	5 0
Imperial Yellow (dry)	,,	0	16 0

MINERALS.—CHINA CLAY and FRENCH CHALK continue in good demand and a steady business is passing in MINERAL WHITE. SATINITE and SNOWDRIFT are in request.

Mineral White (also known as Terra Alba, Gypsum, and Sulphate of Lime), per ton f.o.r. or boat at makers' works, less 2½%:—

Superfine	£1	8	0	del. Lancs.	£1 18 0
Pottery Superior	1	4	0	,,	1 14 0
Ball Seconds	1	0	0	,,	1 10 0
Seconds	0	15	0	,,	1 5 0
Thirds	0	11	0	,,	1 1 0

(Manchester, 2s. per ton less.)

China Clay, in bulk, f.o.b. Cornwall, 9s. to £1 3s. 6d., bags 4s., and casks 9s. 6d. per ton extra; delivered Lancashire, £1 18s. od. to £2 1s. 6d. (for best papers); f.o.r. London, in casks, £2 5s. od. per ton; f.o.b. Liverpool, in 5 cwt. casks, £2 2s. od. to £2 10s. od.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, £2 19s. od., £3 4s. od., £3 13s. 6d., and £3 17s. 6d. per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15s. od. to £5 2s. 6d. per ton of 10 bags.

Superfine Hardening, f.o.r. works, £2 0s. od. to £2 2s. od.

Patent Hardening (2 ton lots), f.o.r. Lancs., £3 5s. od.

Snowdrift (Paper Toughener), in ton lots, 12s. od. per cwt.

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16s. 6d.; calcined, £10 7s. 6d.

Magnesite (in lump), £1 19s. 6d. per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 0s. od. to £4 10s. od. per ton c.i.f. London, Manchester, and Glasgow.

Asbestos, brown grades, £14 0s. od. to £14 12s. 6d.

Sulphate of Barytes, No. 1, £3 4s. od.; No. 2, £2 12s. od.; No. 3, £2 2s. od.; No. 4, £1 17s. 6d. per ton, according to quality.

Bauxite, minimum alumina, 60%, 16s. 3d. f.o.b.

Pyrites (non-cupreous), f.o.b. shipping ports, 4⅛d. per unit.

Satinite, £3 0s. od. to £3 6s. 6d., in casks, f.o.b. Liverpool or Manchester.

Whiting, f.o.b., 10s. 6d. to 12s. 3d. per ton.

Sulphate of Alumina, £4 2s. 6d. to £4 15s. od. per ton del.

Hydrate of Alumina, £12 10s. od.

LIME.—The present price is 10/6 per ton f.o.r. works.

FLOCKS.—Cotton Flocks, fine quality, £2 10s. per ton at works.

BALING TWINE.—Prices:

	Thick.	Medium.	Fine.
Hemp	4d. per lb.	4⅛d. per lb.	5d. per lb.
Mixed	3⅞d. ,,	4¼d. ,,	4⅝d. ,,

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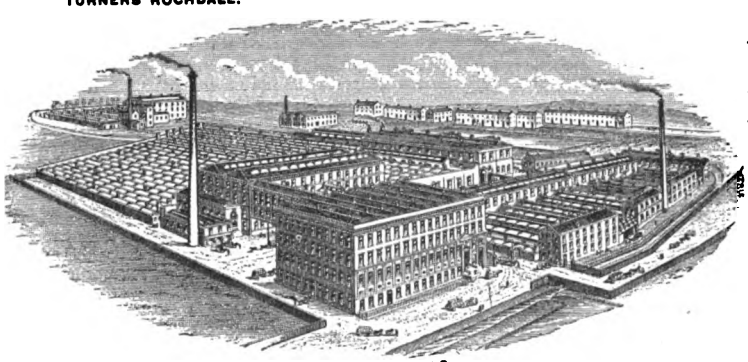

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FOREIGN RAGS.—There is a better enquiry for Foreign Rags; shipments from France and Belgium to Great Britain show an improvement. The week's impor[illegible] British ports were as under:

IMPORTS OF RA[illegible]

Bales	From	Landed
382	Copenhagen	H[illegible]
178	Ghent	
314	Konigsberg	
81	Bordeaux	
45	Harlingen	
52	Hambro	
236	Bremen	
117	Amste[illegible]	
68	Dun[illegible]	
70	Bo[illegible]	
13	R[illegible]	
43		
95		
199		
37		
10		

The Stationers' Company.

[illegible] Sir H. Maxwell, M.P., Sir S. H. Waterlow, Sir E. M. Thompson, Sir Arthur Blomfield, Professor Jebb, M.P., Sir Harry Poland, Mr. R. D. M. Littler, Q.C., Lieutenant-Colonel A. F. Walter, Professor Skeat, Mr. W. C. K. Clowes, Mr. John Murray, Mr. W. S. Sonnenschien, Mr. J. Y. W. MacAlister, Mr. W. G. Mount, M.P., Mr. John Miles, Mr. P. L. Agnew, Mr. T. Fisher Unwin, the Librarian of the Bodleian, Professor Courthope, Professor Gardiner, the President of the Royal Meteorological Society, Mr. Elliot Stock, Mr. F. H. Rivington, Mr. J. A. Fuller Maitland, Mr. H. Sotheran, Mr. H. C. Sotheran, Mr. P. J. Whitaker, Mr. G. A. Macmillan, Professor Bonney, Dr. Besant, Admiral Alington, Mr. George Chater, Mr. F. H. Miles, the Wardens (Mr. W. Rider, Mr. G. A. Spottiswoode, Mr. C. H. Nicholas, and Mr. G. R. Ousey), and the Clerk (Mr. C. R. Rivington).

The loyal and patriotic toasts having been duly honoured.

The MASTER proposed "The Health of the Archbishop of Canterbury."

The ARCHBISHOP of CANTERBURY, in reply, said that the Stationers' Company was distinguished from all the other Livery Companies of London—it stood alone, because all the other companies, as far as he could see, had become somewhat lazy, and had turned away from their proper business. For instance, they heard a good deal about the Fishmongers' Company. How many fish did they catch? Then there was the Drapers' Company. He did not believe that that company could supply him with enough cloth to make him a comfortable pair of breeches. (Laughter.) It seemed to him that they had really given up their proper place in the economy of this great City. The Stationers' Company, however, still acted up to the excellent old English proverb of "Mind your own business." They looked after books—the most important part of stationery—and in all ways they were true to their original calling. They had still to register all the books that were brought to them to be registered, and he believed that an Act of Parliament was going to be passed shortly which would give them still more authority in connection with this subject.

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The VICE-CHANCELLOR of OXFORD and the VICE-CHANCELLOR of CAMBRIDGE responded.

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APROPOS of a paragraph appearing in our issue of May 6th, we have since observed that a number of modifications have been recently made, by official sanction, in the articles of association of the company owning the mill at Fos-sur-Mer, in which the manufacture of esparto pulp was until lately carried on. The capital has been reduced from £24,000 to £4,800. Query, does the difference represent money sunk and lost in the abortive attempt to make French paper mills use home-made esparto pulp?

THE NORTH AMERICAN CHEMICAL CO.—Articles of association of the North American Chemical Company have been filed with the County Clerks of Bay and Wayne counties, Mich., and the Secretary of State. This company will represent the United Alkali Company's interests in Michigan, being the American branch of the concern. The operations of the corporation are to be carried on in the counties of Bay and Wayne, Michigan, and other places in the United States and elsewhere. The capital stock is 600,000 dols., two-thirds preferred and one-third general or common stock. The amount actually paid in is 300,000 dols. The office is to be in Portsmouth township, and the corporate existence is thirty years. The stockholders are John A. E. Rayner, of Liverpool, 9,998 shares common stock; H. M. Gillet, Bay City, one share common stock; M. J. Hummell, Bay City, one share common stock; John A. E. Rayner, Liverpool, 20,000 shares preferred stock.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included:—To London, 2,180 cases and 448 bundles; Liverpool, 329 packages; Manchester, 1,141 packages and 205 bundles; Hull, 815 packages; Southampton, 7 cases; Bristol, 187 packages and 107 cases; Glasgow, 79 packages; Antwerp, 495 packages; Bremen, 16 cases; Hamburg, 20 packages; Argentine, 59 packages; B. Honduras, 49 packages; B. Guiana, 216 packages; Australasia, 1,041 packages; B. W. Indies, 555 packages; Africa, 87 packages; Mexico, 856 packages and 109 bundles; and Newfoundland, 4 packages.

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ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
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The Stationers' Company.

The Master, Wardens, and Court of Assistants of the Stationers' Company gave a dinner on Monday night in their hall "to meet his Grace the Archbishop of Canterbury, patron of the company." The Master, Mr. C. J. Clay, presided, and among the guests were Lord Kelvin, Sir John Evans, Sir H. Maxwell, M.P., Sir Noman Lockyer, Sir E. M. Thompson, Sir S. H. Waterlow, Sir Robert Ball, Sir Arthur Blomfield, Professor Jebb, M.P., Sir Harry Poland, Mr. R. D. M. Littler, Q.C., Lieutenant-Colonel A. F. Walter, Professor Skeat, Mr. W. C. K. Clowes, Mr. John Murray, Mr. W. S. Sonnenschien, Mr. J. Y. W. MacAlister, Mr. W. G. Mount, M.P., Mr. John Miles, Mr. P. L. Agnew, Mr. T. Fisher Unwin, the Librarian of the Bodleian, Professor Courthope, Professor Gardiner, the President of the Royal Meteorological Society, Mr. Elliot Stock, Mr. F. H. Rivington, Mr. J. A. Fuller Maitland, Mr. H. Sotheran, Mr. H. C. Sotheran, Mr. P. J. Whitaker, Mr. G. A. Macmillan, Professor Bonney, Dr. Besant, Admiral Alington, Mr. George Chater, Mr. F. H. Miles, the Wardens (Mr. W. Rider, Mr. G. A. Spottiswoode, Mr. C. H. Nicholas, and Mr. G. R. Ousey), and the Clerk (Mr. C. R. Rivington).

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NEW YORK	99, Nassau Street.

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The Esparto Trade.

Messrs. Ide and Christie, in their circular for May, report:—Up till about the end of April a full amount of business was carried through, but the formal declaration of war between the United States and Spain has had the effect of determining shippers, not only of Spanish esparto, but of African also, to proceed with caution. To the fairly numerous enquiries for supplies of Spanish new crop which have been general lately, sellers seem indisposed to respond, and hence while current rates are nominally stated higher, there is little business passing. Although the area of active hostilities may remain far removed from the Peninsula, the internal condition of Spain gives rise to considerable apprehension, since one effect of civil disturbance might be a material interference with the collection of supplies, their transport to the seaboard, and subsequent shipment. That sellers should suspend further offers for the present need not, therefore, excite any surprise, and their caution may be expected to continue until the political outlook is somewhat clearer. In sympathy with Spanish, the various descriptions of African are higher in quotation, but for these the demand is quiet. During April the imports of all kinds summed up a large total, of which nearly one-half was contributed by Algeria, and the statistics of both the four-month and twelve-month periods mark a large increase over those of the previous two years. It may be expected, however, that importations will now be checked by the scarcity of steamers and the rapid rise in freights following upon the demand for grain and other charters in the Mediterranean. The advance in cost of transport has been so extensive as to constitute in itself a cause for higher quotations of esparto contracts.

Spanish arrivals in April were only moderate, and the total for the four months is still considerably less than last year, viz., 21,578 tons against 24,848. The business in new crop, which continued on a pretty extensive scale until nearly the end of the month, has now ceased with the suspension of offers from sellers, who apparently are resolute in refusing further engagements. The amount of business already negotiated before the declaration of war was fairly large, and many of the more important consumers secured contracts covering their requirements down to the middle of next year—a fact upon which they probably now congratulate themselves. Since the pause in negotiations prices have nominally advanced, but until sellers again appear with actual offers true market values cannot be ascertained.

Algerian has been an exceedingly heavy import—the month's figures having only once been previously surpassed, when 12,000 tons arrived in January, 1890. The great bulk of receipts passed away upon contracts direct from the import ship, and it is possible there has been an increased consumption of this description owing to the stiffening of Spanish prices during the past nine months. There has been a recovery in values, which are steady at the higher quotations now current. A fair extent of business has been negotiated for autumn and winter fulfilment, but sellers do not press offers on the market.

Tunisian has likewise been largely received, and the four months' figures now aggregate 13,754 tons, against 5,188 last year. With the approach of the cereal harvest, which gives every promise of being abundant, esparto arrivals at the Tunisian shipping ports have almost ceased, while the stocks on the coast are considerably reduced, and within moderate compass. The market on this side is steady and nominally higher, but the enquiry is small.

Tripoli has come to hand in moderate quantity, bringing up the four months' total to 13,793 tons, or 2,200 less than the corresponding period of 1897. According to advices from Tripoli the anticipations of a diminished supply this season are likely to be realised, and there is therefore no inclination among sellers to press for further orders.

The following is an official summary of esparto arrivals at all U.K. ports during past month:—

London	1,265 tons	Liverpool... ...	4,197 tons
Fleetwood ...	1,530 ,,	Greenock ...	1,790 ,,
Glasgow	1,760 ,,	Aberdeen... ...	850 ,,
Dundee	701 ,,	Kirkcaldy ...	1,942 ,,
Alloa	450 ,,	Bo'ness	887 ,,
Grangemouth ...	545 ,,	Granton	5,799 ,,
Leith	320 ,,	Tyne	800 ,,
Sunderland ...	1,005 ,,		

These figures give a total of 23,751 tons, including 3,726 tons from Spain; 11,506 tons from Algeria; 4,984 tons from Tunis; 3,530 tons from Tripoli, and 5 tons from France.

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EMPLOYMENT IN THE PAPER TRADE.—According to the labour correspondent of the Board of Trade, employment in the paper trade has improved, the percentage of unemployed union members at the end of April being 2·8, compared with 3·7 in March. The percentage for April, 1897, was 4·8.

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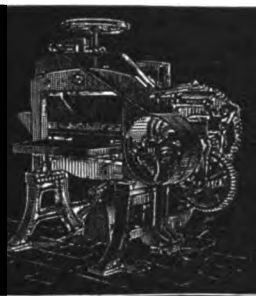

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
A B	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D	71	28	730	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z	210	82½	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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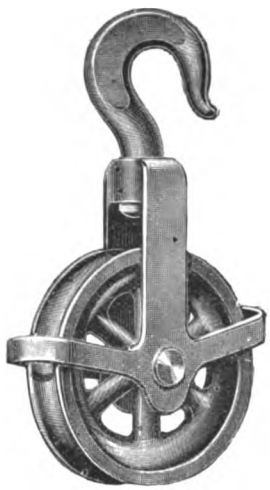
Concerning Lubrication.

SELF-LUBRICATING PULLEYS.

Friction is one of the chiefest amongst the *betes noir* of the engineer and machinery user. Wherever there are moving surfaces which come in contact there must be friction. It is the function of lubrication to reduce the asperities of contact between opposing surfaces, and consequently to reduce the loss of power and degree of wear and tear, which friction causes. Under many circumstances and conditions these services are so efficiently rendered as to make the loss of power and the wear and tear only fractionally appreciable. Friction, however, can never be wholly abolished. Like the poor, it is always with us; it has come to stay.



The expression lubrication has been tersely, but none too adequately, defined as being "the distribution of an unguent over bearing surfaces to preserve them from the heating which results from the friction of surfaces in actual contact." The lubricants most generally used are, as is well known, tallows and oils. Soapstone and graphite are frequently used with success as substitutes for these, as are also compositions of the "metaline" order. Generally speaking, however, an efficient system of lubrication must fulfil certain conditions, and the lubricant used must fulfil these: it must have ample capacity for promoting uniformity of distribution, and at the same time be efficiently cohesive and viscous in its characteristics to interpose adequately between the surfaces which would otherwise be in absolute contact; it must be capable of generating only a minimum of heat during a maximum number of movements of the surfaces to which it is applied; it should be free from acid or other admixtures calculated to act injuriously upon the surfaces which it anoints; it should possess pronounced capacity for insinuating itself between bearings, and at the same time have an absolute minimum of tendency to solidify, either from freezing or other extraneous causes; its flash point should be high; and it should be as free as possible from liability to "gum."

All mechanisms, from steam engines and papermaking machines, to the unsophisticated plummer block or loose pulley, must be adequately lubricated. There is, of course, such a thing as over-lubrication, and every bearing and the immediate proximity of every oil cup need not represent a swamp of lubricant. In fact the abuse of lubricants is almost as great a source of loss and vexation to the mill owner as is imperfect lubrication itself. It should be regarded as an accepted fact that to enable lubrication to serve its function properly, cleanliness should be first observed, and that the lubri-

cants used should be sufficient in quantity, of the proper kind, and properly supplied.

These remarks lead us to observe that old methods of securing efficient lubrication are not necessarily the best under all circumstances. They sometimes involve a needless amount of attention and expenditure of time. Where the oiling of sheaves, loose pulleys, and wheels is concerned, for example, this is especially noticeable. It is to remove these objections, and at the same time to supply other advantages in practice, that Macfarlane and Reid's patent self-oiling system has been devised. Simple it is, and also ingenious. Briefly, it may be thus described: An oil reservoir is formed in one of the spokes of the wheel or pulley, or by coring out the hub or boss. The receptacle for lubricant thus formed is charged through a small hole, fitted with a screw. The oil passes through small holes in the brass bush into which are cut grooves or slots packed with leather, which is always kept well saturated with oil. The bush is made to taper, and have what engineers term a "driving"

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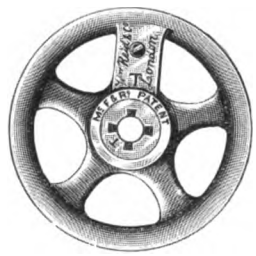
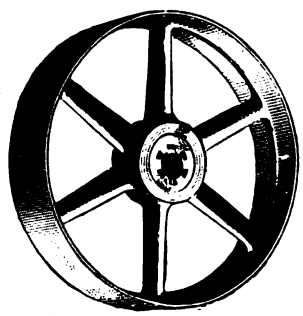
fit. The oil can therefore only escape by percolating through the leather, which it does, keeping the spindle always sufficiently lubricated. It is only necessary to refill the oil chamber at intervals, which vary in length, of course, according to the amount of usage of the pulley or wheel.

The advantages which this self-oiling system presents are various. To begin with, when applied to sheaves, the cost is practically the same as where ordinary sheaves are used, but an immense saving is claimed by the makers to be effected in the repairing of bushes, pins, etc., as these ordinarily last for years. As the spindles are always adequately lubricated, without being oiled to excess, the friction is reduced to something like a minimum, the running being correspondingly facilitated, and cutting and undue wear prevented. In many cases, we understand, existing pulleys can be rebushed on Macfarlane and Reid's patent system at less cost than is usually caused by the renewal of pins.





Although the system is especially adapted for use on shipboard, it has been for several years employed in connection with miscellaneous industrial operations with the most satisfactory results. We are told that it has been worked for five years on a saw-bench, and three years, night and day, in hydraulic cranes, while the articles themselves show hardly any perceptible wear. Some 50,000 tons of cargo and 20,000 loads of timber have been dealt with, and the results have been equally satisfactory. One firm using a self-lubricating loose pulley run it on an average 57 hours a week at 500 revolutions a minute, oiling it once a week. After six months' work it was pronounced "as good as on the day it came in."

Other instances might be given from the information before us as to the efficiency of Macfarlane and Reid's patent system as applied to sheaves, loose pulleys, tackle blocks, wheels, steam and hydraulic cranes, elevators and hoists, axle bearings, and miscellaneous mechanisms; but what we have said will probably suffice to indicate that the adoption of the system secures the fulfilment of most of the conditions which we mentioned at the outset of this article. It is consequently worthy of the consideration of machinery users. Several of its applications we illustrate, and the practical eye will readily grasp the disposition of the oil-container and distributing arrangements. The makers of these self-oiling goods are Messrs. William Reid and Co., of 112, Fenchurch-street, London, E.C., and 1, Akenside-hill, Newcastle-on-Tyne.

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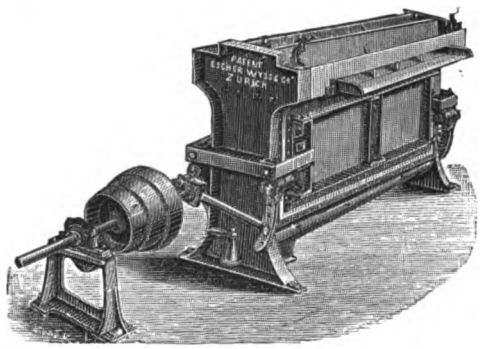

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Quantity	From	Importer	Port
1 case	Antwerp	A. Sander	New York
151 cases	,,	Downing and Co	,,
9 ,,	,,	Kupfer Bros	,,
12 ,,	,,	Hempstead and Co	,,
20 ,,	,,	De Jonge and Co	,,
20 ,,	,,	J. W. Hampton	,,
2 ,,	,,	Lopez and Co	,,
23 ,,	,,	Vandergrift and Co	,,
18 ,,	,,	Stone and Co	,,
20 ,,	,,	Downing and Co	,,
3 ,,	Bremen	Wicks and Co	,,
41 bdls.	Bordeaux	Herman Lips	,,
18 ,,	,,	E. T. Molloy	,,
25 cases	Havre	Druckleib and Co	,,
84 ,,	,,	American Tobacco Co	,,
3 ,,	,,	M. Speigel	,,
10 ,,	Liverpool	Hug & Boskowitz	,,
1 ,,	,,	O. Heine	,,
83 bales	,,	Manhattan Shirt Co	,,
1 ,,	,,	Groom and Co	Boston
2 ,,	,,	To order	,,
24 cases	London	J. Atkins	,,
3 ,,	,,	Hug & Boskowitz	New York
80 ,,	Marseilles	Sheldon and Co	,,
17 ,,	Rotterdam	Lindenmeyr and Sons	,,
3 ,,	,,	De Jonge and Co	,,
7 ,,	,,	Anthony and Co	,,
4 ,,	,,	Dingelstedt and Co	,,
15 bdls.	Trieste	Lindenmeyr and Sons	,,

MANILLAS.

23 bales	Antwerp	Salomon and Co	New York
265 ,,	Copenhagen	,,	,,
60 ,,	London	Train, Smith & Co	Boston
155 ,,	,,	E. P. True	,,
96 ,,	Liverpool	Schulz and Ruckgaber	,,
179 ,,	,,	Butterworth and Co	,,
114 coils	,,	Dutton and Co	,,

RAGS.

36 bales	Antwerp	Salomon and Co	New York
280 ,,	,,	A. Kazenstein	,,
76 ,,	,,	Salomon and Co	,,
289 ,,	,,	Jessup and Moore	,,
4 ,,	,,	Train, Smith & Co	Boston
136 ,,	,,	Butterworth and Co	,,
156 ,,	Hamburg	Lewy Bros	New York
165 ,,	Leghorn	Castle and Gothell	,,
55 ,,	London	J. Libmann and Co	,,
223 ,,	,,	Train, Smith & Co	Boston
274 ,,	,,	,,	,,
72 ,,	,,	T. F. Ring	,,
229 ,,	,,	Crocker, Burbank & Co	,,
40 ,,	,,	Wheelwright Paper Co	,,
82 ,,	,,	Philadelphia Shipping Co	Phld
45 ,,	Liverpool	Schulz and Ruckgaber	Boston
25 ,,	,,	Butterworth and Co	,,

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48 ,,	,,	Butterworth and Co	,,
96 ,,	,,	Wheelwright Paper Co	,,

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60 ,,	,,	F. A. Reichard	,,
8 ,,	,,	Roessler & Hasslacher	Boston
25 ,,	Hull	J. L. & D. S. Riker	New York
200 ,,	Liverpool	,,	,,
82 ,,	,,	Reed, Halliday & Co	,,
281 ,,	,,	J. L. and D. S. Riker	Boston
43 ,,	,,	Marble and Co	,,

CAUSTIC SODA.

375 drums	Hull	Hill's Son & Co	New York
100 ,,	Liverpool	,,	,,
100 ,,	,,	J. L. & D. S. Riker	,,
,,	,,	Hill's Son & Co	Boston

SODA ASH.

Quantity	From	Importer	Port
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64 ,,	,,	Wing and Evans	Boston
53 tcs.	,,	,,	,,
908 bgs.	,,	,,	,,

SIZING.

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VOL. XXIX. No. 21. LONDON: MAY 27, 1898. EVERY FRIDAY. PRICE SIXPENCE.

Paper for Lithographers.

Paper for lithographers' use has to be especially prepared. The paper used for transfer paper is a thin sized paper, prepared on the surface as follows:—Ingredients:

1 oz. gum dragon (gum tragacanth).
2 ,, glue.
2 ,, gamboge.
8 ,, French chalk.
1 ,, old plaster of paris.
2 ,, starch.

Method of Preparation:—Dissolve the gum dragon in about 10 times its weight of cold water. (Unless the gum is in powder, several weeks will be required to effect perfect solution, and any white lumps that are undissolved can be removed by straining the gum mucilage through muslin.) Separately soak the glue in twice its weight of water, and melt it at a gentle heat, then mix the glue solution with the gum dragon mucilage, and also the gamboge in powder. Separately mix the French chalk, plaster of paris and starch, all in powder, by sifting together several times. Finally mix all the ingredients together, and grind up well. Then mix in sufficient water to give it the consistency of oil, and apply this compound to the paper with a brush.

To Colour Transfer Paper.—Gamboge is the material generally used for this purpose, but any other colouring matter will answer the purpose. A light pink is distinguishable by artificial light, while a yellow is scarcely visible; rose pink or a solution of cochineal in ammonia answers this purpose.

Transfer Paper for Warm Stones.—Boil cuttings of parchment or kid leather gloves in water for several hours until the fluid sets together when cold. Then melt this jelly at a gentle heat, and grind up therein some dry flake white, and rub the mixture through a sieve—the quantity of flake white will depend on circumstances. The pen will not work upon it properly if too much flake white be used, and the finest lines therefore would most likely fail to be transferred. Lay this compound on the paper with a brush or sponge, and give two coats, the second when the first is dry. The paper used for writing should be thinner than that used for drawing; drawing paper being used for very large subjects. For this paper the stone should be quite warm. Flake white may be replaced with permanent white (precipitated sulphate of barium), gelatine or white glue may also be used instead of parchment size.

Transfer Paper for Cold Stones.—Ingredients:—

4 ozs. starch.
1 ,, gelatine.
(Gum arabic, or dextrine if desired).

Method of Preparation:—Soak the glue for 12 hours in cold water, mix the starch in a little cold water, and then pour boiling water slowly on it until it thickens, stirring all the time; then mix the glue and starch paste together. Boil it over a slow fire, and brush it over the paper while warm. Tracing paper, printing paper, or even writing paper may be used. For ordinary use printing paper is preferred, because the water penetrates more quickly through the back of it in transferring. A little flake white may be added if desired, while for a more adhesive paper the dextrine, or gum arabic may be added.

Black transfer paper is prepared by smear-

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ing the surface with a mixture of lampblack and olive oil.

A multiplying transfer paper consists of sheets of paper, each one supplied with a colouring layer of methyl aniline violet. An oiled leaf serves as a hard, smooth under layer. A sheet of the copying paper is placed on this, then a sheet of writing paper, and a hard-lead pencil used for writing with. The back of the writing paper will give a negative of the writing in high colour. The copying sheet is wetted thoroughly, and from it 20 or more copies can be made which will not roll or show a gelatinous coating. This paper is useful for taking copies of embroidery and raised patterns on paper.

A general formula for a black multiplying or manifold transfer paper consists in smearing the surface of thin post or tissue paper with a compound composed of :—

4 ozs. tallow.
1 ,, blacklead graphite.
10 fluid ozs. linseed.

Lampblack sufficient to make of a creamy consistency. Heat altogether.

Bandakai, or Okro Fibre.

Enquiries have recently been made in Ceylon as to the possibility of extracting fibre from *Hibiscus esculentus*, a plant known locally as Bandakai, and a recent issue of the *Agricultural Magazine of Colombo* contains an interesting article on this subject.

The genus *Hibiscus* is of considerable economic value, on account of the fibres which nearly all the species yield. Several are already well known commercially, and have been examined in the Research Laboratories of the Imperial Institute.

The bast of *Hibiscus esculentus* yields a white fibre which is long, silky, strong and pliant, and is composed of very fine individual fibres. The preparation and use of this fibre has, within recent years, been revived in the Southern United States, where the plant is largely grown during the summer; and also in Cuba. In the West Indies the plant is known as the Ochro, or Okro, and, as in the East Indies, the fruit is extensively used as a vegetable. From a report by Messrs. Ide and Christie it appears that the Cuban fibre would fetch, in London, about £18 to £20 per ton, although, taking into consideration the yellow colour, and the imperfect cleansing of the specimen examined, the value might be increased to £24 or £25 per ton by more careful preparation.

The plant is already largely grown by the natives of India for the sake of its fruit, which is eaten locally by all classes, but it is not generally cultivated as a field crop. The fibre is employed economically in some parts of India, but in many districts its excellence has not yet been recognised. It is undoubtedly valuable, and seems to possess qualities specially fitting it for papermaking. Liotard, in his "Papermaking Materials of India," says that "the fibre is very fine and especially suitable for the manufacture of paper," and that "it has already been used for this purpose in the Lucknow Central Jail." In France the manufacture of paper from okro is the subject of a patent. It receives mechanical treatment only, and furnishes a paper known as *banda*, which is said to be equal to that made from rags.

According to Roxburgh, the breaking strain of the paper is 79 lbs. when dry and 95 lbs. when wet. It contains 74 per cent. of cellulose, and in Cross and Bevan's experiments was found to lose 9·8 and 14·2 per cent. of its weight, when boiled with a 1 per cent. solution of caustic soda for 5 minutes and 1 hour respectively. Jute, under the same conditions, loses 13·3 and 18·6 per cent., and sida loses 6·6 and 12·2 per cent.; other less valuable fibres lose upwards of 50 to 60 per cent.

The Agri-Horticultural Society of India found *H. esculentus* to yield a poor crop, especially in low-lying ground. The average acre yield of fibre by Death and Ellwood's process was only 84½ lbs., while, by retting, even from this poor crop, it amounts to 6 maunds and 17 seers (1 maund = 80 lbs., 1 seer = $2\frac{2}{3}$ lbs.). The successful cultivation of okro as a field crop, largely depends on a rich manuring of the soil. Two varieties are grown in Bombay, both being sown in June. The "early" variety bears fruit from about August to December, while the "late" does so from the end of September to November. The seed is sown at intervals of about a foot (two or three seeds being put into each hole), on ridges three feet apart. The acre rate of seed varies from 5 lbs. to 10 lbs., the yield of fruit being from 6,000 to 6,500 lbs.

In Madras the "early" sowing is during the first week in March, the crop being gathered the first week in July; the "late" sowing is in the latter part of July, and the gathering during the latter part of December. The cost of cultivation averages about Rs.5 per acre and the profit Rs.9. The unripe fruit is sold locally, but the fibre is quite neglected, the stem being allowed to rot unused. The leaves are sometimes used as a cattle fodder.

In Mymen Singh and Dacca the fibre is occasionally prepared for adulterating jute, but the process by which it is extracted is not the same as that used in the Southern Provinces, and the fibre is harsh and brittle. Notwithstanding this drawback, statistics of a few years ago show that the quantity annually prepared is from 6,000 to 7,000 cwt., of a value of from £27,000 to £28,000.

The specimens of Indian okro fibre in the Kew Museum resemble hemp in colour and texture, and seem well adapted for making ropes, twine, and sacking.

A very tough paper may be made by mixing chloride of zinc with the paper pulp in the process of manufacture. This is the principle on which paper is made that is used in America for telegraph poles, etc., the greater the degree of concentration of the zinc chloride (which, by the way, is a virulent poison) the tougher will the produced paper be.

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THE DEVELOPMENT OF THE Canadian Wood Pulp Industry.

THE CUSHING SULPHITE FIBRE CO., Limited.

We have received a copy of the prospectus of the Cushing Sulphite Fibre Co., Ltd., which has been formed to manufacture sulphite pulp at Fairville, St. John, N.B. The nominal capital is 500,000 dollars, divided into 2,500 5 per cent. preference shares of 50 dollars each and 7,500 ordinary shares of 50 dollars each. The present issue is 2,000 preference shares and 3,000 ordinary shares.

The site of the works is regarded as one of the best in Canada, the raw material being plentiful and cheap, excellent shipping facilities, with an open harbour all the year round. Mr. George S. Cushing, owner of the Cushing Saw Mills, has taken an active interest in the undertaking, and Mr. James Beveridge, of London, when visiting Canada some months ago, was highly impressed with the excellent prospects of a sulphite pulp mill at St. John. Mr. Beveridge, we notice, is the consulting engineer to the company.

The directors are all local gentlemen :—Joseph Allison, of Manchester, Robertson and Allison, wholesale and retail dry goods merchants, St. John, N.B.; Thomas McAvity, of McAvity and Sons, wholesale and retail hardware merchants, St. John, N.B.; William H. Murray, lumber merchant and mill owner, St. John, N.B.; George S. Cushing, of Andre Cushing and Co., lumber merchants and mill owners, St. John, N.B.: and George F. Baird, ex-M.P., President Star Line Steamship Company, Ltd., St. John, N.B., managing director.

It is stated in the prospectus that the cost of the site is 10,000 dollars (which Mr. G. S. Cushing will invest in the ordinary shares of the company), and the cost of building and plant 175,000 dollars, leaving 65,000 dollars (out of an issue of 250,000 dollars) for working capital. The estimated cost of manufacturing sulphite fibre pulp is $31.25 per ton (2,240 lbs.), including freight and insurance to Great Britain and selling commission. A daily output of 28 tons, for 300 working days, gives an annual production of :—

8,400 tons, at $31.25 per ton, gives	$262,500
The selling price of 8,400 tons, at $38 per ton, delivered f.o.r. Great Britain, gives ...	319,200
	$56,700
Deduct allowance for depreciation of machinery and plant	12,500
	$44,200
Deduct for dividend on preference shares ...	5,000
Showing a surplus of	$39,200

Or, a return equal to *16 per cent.* upon the ordinary capital issued.

We understand that buildings will be erected to accommodate plant to produce 56 tons of dry pulp daily, but at the outset machinery will be installed to produce 28 tons per day, as mentioned above.

THE FRENCH WHOLESALE STATIONERS ASSOCIATION is up in arms against a recent proposal of the authorities of the National Printing Office, to exclude dealers, as distinguished from makers, from tendering for the paper supplies of that institution. The director has been interviewed, without much result so far, and efforts are being made to interest the entire trade in the movement against the new scheme, which, if carried into effect, will, it is contended, do serious damage to the commercial interests of a large and influential body of tradesmen connected with the paper industry.

COPYING PAPER.—*Apropos* of the remarks on this subject in our issue of May 13th, a Spanish inventor has just patented a copying ink which dispenses with the necessity of damping the copying-book sheets first when taking an impression. This fluid, which is aptly named the "Eureka," consists of the following (French measures) :—Water, 1 litre; Aleppo gall nuts, 30 grammes; campeachy wood, 60 grammes; sulphate of iron, 30 grammes; sugar, 250 grammes; gum arabic, 15 grammes; glycerine, 15 grammes; citric acid, 3 grammes; and acetic acid, 15 grammes. This preparation apparently does away with any necessity for impregnating the paper pulp with chemicals, as suggested in our article.

STATISTICS RELATING TO PRODUCTION.—At the last annual meeting of the American Paper and Pulp Association, the publication of an annual table showing the production of paper was suggested, and a committee was appointed to deal with the matter. A report has now been issued to the effect that it was inadvisable to begin the work of collecting statistics concerning production. The New York *Paper Trade Journal* considers that "such a determination is to be regretted. It is unfortunate. For years the necessity of such statistics has been talked about and acknowledged, but there have always been some who seemed to fear that in aiding such a plan they would be placing themselves in a position where possibly they might divulge some of their business to their competitors. Such a fear is entirely without foundation. The mere fact that a manufacturer states that in a certain period he had made so many pounds of a certain kind of paper, and that at the end of that period he had so much finished stock on hand, these facts being consolidated in a general table in which the identity of the individual report and of the person who made it is completely lost, cannot possibly work in any such way. On the other hand, such a general table would be of vast value to each manufacturer, for it would show him the condition of the consumption, as to which he has now to rely on a variety of uncertain and conflicting reports. This matter of gathering statistics has worked well in the iron and steel industry; it has worked well in certain branches of the paper trade, where it has been and is yet operating, and there is no reason why it should not work equally well all round."

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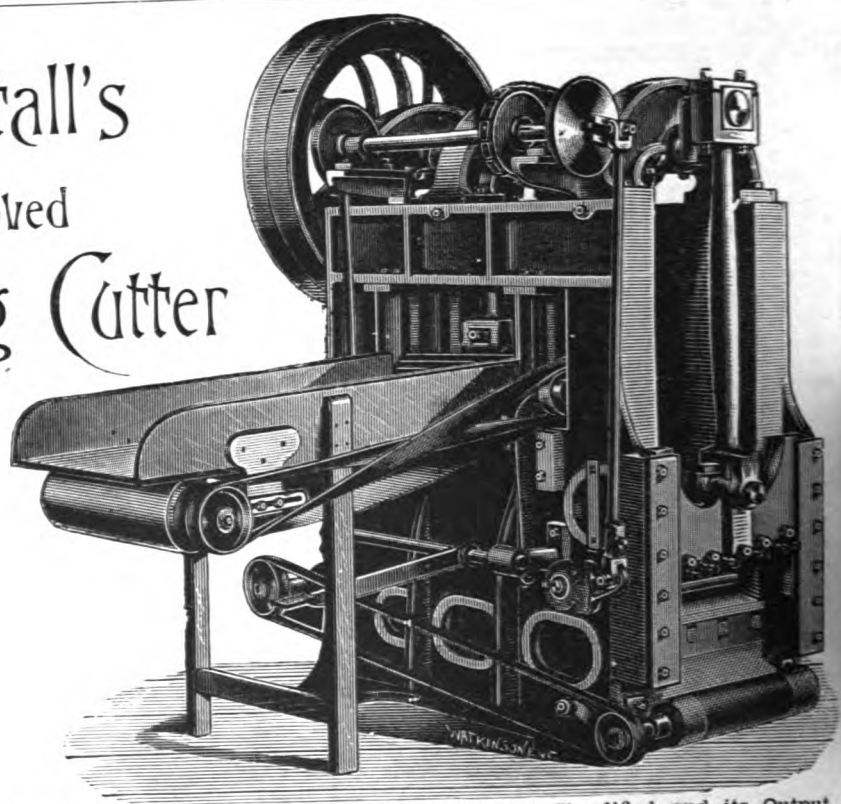

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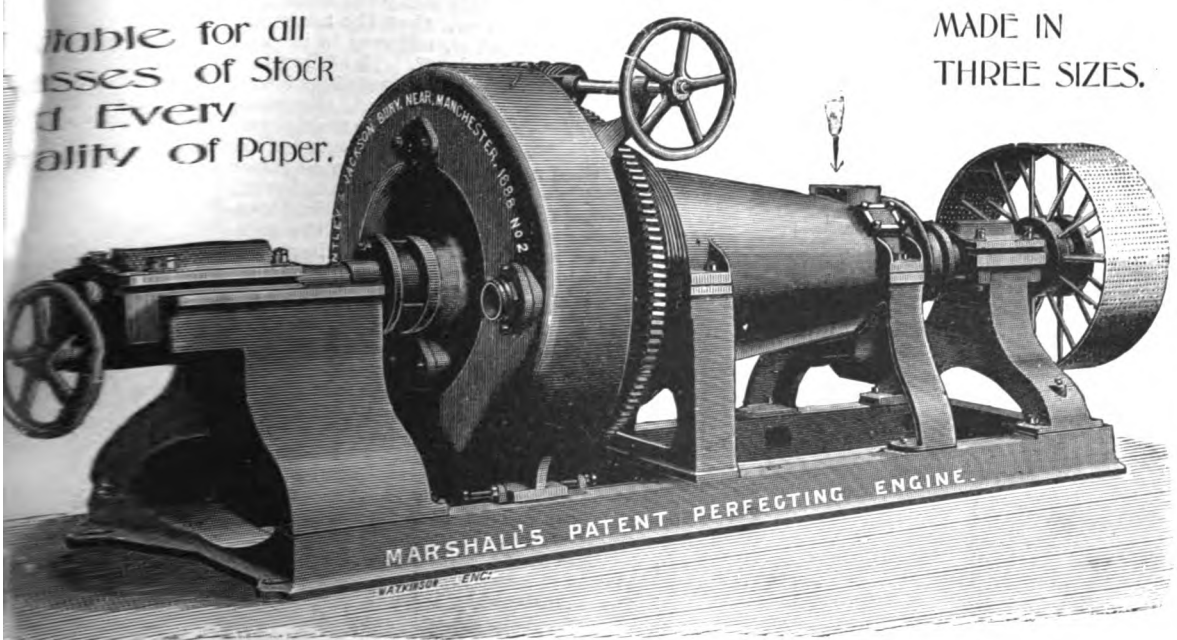

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VOLUNTARY WINDING-UP OF THE Patent Waterproof Paper & Canvas Co. LIMITED.

Resolutions have been passed to wind-up this company voluntarily, and Mr. Andrew D. Chadwick, 95, Finsbury-pavement, E.C., has been appointed liquidator.

The company was registered on the 27th of June, 1881, to acquire the business of the Patent Waterproof Paper Co., carried on at Willesden Junction, the nominal capital being £60,000, divided into 1,000 ordinary and 200 deferred shares of £50 each. The directors were—Messrs. K. Knowles, T. Moss, J. Polson, Samuel Spalding, E. Healey, and A. E. Healey. The two latter were the vendors, and they were allotted 250 ordinary shares and 200 deferred shares, deemed as fully paid.

An agreement, dated 16th of March, 1883, set forth that Mr. Samuel Spalding agreed with the directors to undertake the chief control and direction of company's operations for one year, from the 30th day of June, 1882, in consideration of the sum of £1,000 of the company's ordinary shares, to be issued as fully paid.

An agreement, dated 9th of August, 1883, made between Dr. C. R. A. Wright and the company, provided that the former should assign to the company his patent No. 737, of the year 1883, the consideration to be £200 and 20 fully paid up ordinary shares. The money payment was to take effect "as soon as it should be demonstrated to the satisfaction of the company that the improved process, protected by the said letters patent, is a practicable and workable process, and one which will effect a saving of at least £2 per ton of blue liquor in comparison with the company's then present process for preparing that said liquor."

In July, 1888, the capital of the company was reduced from £60,000 to £36,000, divided into 1,200 shares of £30 each, by the extinction on each of the ordinary and deferred shares capital to the extent of £20. At the same time the directors were authorised to issue 200 new shares of £30 each. The list of shareholders never exceeded twenty-four persons. According to the returns as to capital made up to August, 1897, the nominal capital is given at £42,000, in 200 preference, 1,000 ordinary, and 200 deferred shares of £30 each. The amount of calls paid was £14,000, whilst on 450 shares £13,500 was considered as paid.

Certain arrangements, we understand, have been entered into by the company with its creditors, and these have been agreed to by Mr. John Polson, the representative of the holders of the debentures issued by the company.

RUSTON, PROCTOR AND CO., LTD.—A dividend of 5 per cent. for the year 1897-98 has been declared by the directors of Ruston, Proctor and Co., Ltd, For 1896-97 the dividend was 4 per cent., and for 1895-96, 8 per cent.

Coating Paper.

A British patent has been granted to Mr. W. A. Hall, of the United States, relating to "facing" paper with clay or the like. It is pointed out that at present this is done by spreading clay mixed with a solution of glue upon the surface of the paper and allowing it to dry. Such a facing is soluble, and to render it waterproof it has in some cases been further treated with a solution of alum or bi-chromate of potash. This, however, requires the paper to be put through two distinct processes, which is somewhat costly. It is also known that glue is rendered insoluble by formic aldehyde, but if formic aldehyde be added to a solution of glue in sufficient quantity to render the glue insoluble, the glue is at once precipitated and cannot be used as an adhesive agent. The patentee claims to have discovered that the materials commonly used for facing paper, such as clay, satin white, and blanc-fixe, if added to the solution of glue before the formic aldehyde, greatly delay the action of the latter, so much so, that the mixture, when spread upon paper, adheres to it perfectly and will not wash off. The following are suitable proportions:—About 85 per cent. clay or similar base, 13 per cent. albumen, glue, or caseine, and 2 per cent. formaldehyde (40 per cent. sol.). The glue or casein is first dissolved, then mixed with the clay or other base (which has previously been mixed with water); after this mixture is made, the formaldehyde should be added, and then the mixture is ready to spread. Of course these proportions can be greatly varied.

ANGLO-AMERICAN CHAMBER OF COMMERCE IN BRUSSELS.—The British and American community in Belgium have just formed an Anglo-American Chamber of Commerce at Brussels with an influential Council. The objects of the Chamber are to promote measures calculated to benefit, protect, and forward the mercantile and trading interests of its members in Belgium, and to represent and express their sentiments on commercial affairs. Suitable premises have been secured at 29, Boulevard Anspach, in the centre of the town. Numerous applications for membership have been received from all parts of the country, and the British and American trading interests in Antwerp are already particularly strongly represented. All information concerning the Chamber may be obtained from the honorary secretary, Mr. H. Waterlow.

PRISON MADE GOODS.—In the report of the Elberfeld Chamber of Commerce it is stated that manufacturing stationers feel the competition of prison made goods. It appears that prisoners are trained to work machinery. Formerly only hand-made goods were made by prisoners. It is contended that some reform is needed, as such competition is against the spirit of the German prison regulations.

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The Workmen's Compensation Act.

Employers should loose no time in providing against the new obligations which will be entailed under the Workmen's Compensation Act, 1897. The insurance companies have finished their heavy task of tabulating rates to cover the liabilities of the new Act, and, no doubt, in some cases they will be regarded as being rather high.

The Workmen's Compensation Act, 1897, as everyone knows, comes into operation on 1st July next, hence it will be seen that the employers have now little time left to discuss the methods whereby the excessive liability can be most economically borne.

One glaring outcome of the new Act is that the existing basis on which an employer is liable to his workmen for injuries has been displaced, for under the present Employers' Liability Act, 1880, an employer is only liable for his own personal fault or the fault of persons to whom he delegates power, but under the Workmen's Compensation Act the law enacts that an employer shall be liable to his workmen for all injuries by accident arising out of and in course of their employment. This, it will be seen, is a most sweeping liability, and has led to employers—in certain districts—banding themselves together to discuss whether this liability can be best met by instituting associations, or by granting the enormously increased rates fixed by the insurance companies.

The matter of these risks has had the closest attention of insurance company directors for some months, and as these are attended with so much liability, twenty-three of the leading insurance companies have—according to the *Financial Times*—come to an arrangement which is practically one of mutual insurance. The risks will be so heavy that the companies will adopt the same methods as in the case of fire insurance, and sub-divide them between the companies as a whole.

The Workmen's Compensation Act undoubtedly places the master completely at the mercy of the workman, for, let the master employ the best skill, provide and maintain the best plant, and take the fullest precautions against accident, the only loophole of escape afforded him is to establish that the accident was due to the serious and wilful misconduct of the workman. And this is not all, for, if accident or death befall others through a workman's fault, the master is still liable to pay full compensation. Indeed, the workmen are protected on all hands, and the present remedy of the Employers' Liability Act is to remain. Hence, if the workman fails in his claim under the one Act, he has the other to fall back upon.

The scope of the new Act covers six million persons, *and involves all trades but shipping and agriculture.* In its right of liability the Act has no limit of duration, it even goes beyond a man's life, and full power is placed in the hands of the arbiter, whose judgment shall be final.

As to its scheme of liability, in the event of death from injury, £150, or a sum equivalent to the three years' earnings of the deceased—whatever sum is the larger—will be awarded his dependents. A maximum of £300 is fixed, but that maximum sum is only paid in the case of a father to those who solely depended upon him. As to those only partially dependent, the arbiter has power to award to each a proportionate sum. Under the head of disablement it is expected most claims will be made, but, in the first place, let it be understood that the qualification of the workman's right is that he shall not be entitled to any compensation whatever for injury which does not disable him for a period of more than two weeks. This clause is meant to free the employer from slight and trivial injuries, and to prevent men from scheming. After two weeks the provision for disablement begins, and shall be equal to 50 per cent. on the man's earnings, but must not exceed £1 weekly. A blot is the indefinite duration of payment of this aliment, although at the end of six months the employer may have the power to commute his liability by the payment of a lump sum. This would entail a big outlay of capital, for taking a man of forty and giving him an average lease of life would mean that an employer would pay £930.

The heavy liability has been fully grasped, hence it is that trades are banding themselves together to form mutual insurance companies. According to the Glasgow correspondent of our financial contemporary quoted above, so far as these schemes have been perfected, protection can be secured at one-third less than that which is afforded by the insurance companies. But that is only true in one sense, for it will be seen that if successful protection is to be secured, it must largely depend on how the claims are handled, on rates being adequate, and on working management. Mutual associations have no experience to go upon, and have no fund to meet immediate wants, whereas, on the other hand, insurance companies have data to work upon, and they have established reserves to meet claims, and it may further be taken that, as insurance companies gain knowledge, those trade risks which are considered too high will be tapered down by competition, and in the end each branch will be made to carry its own fair share of risk rates.

It is claimed that the combining of trades in mutual association will be taken as a menace to the workmen, for it is very probable that these associations may be extended so as to fight trade disputes. Indeed, the general feeling is that these combinations must widen the breach between capital and labour. It also goes without saying that litigation will be continuous.

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TRADE NOTES.

MR. ALBERT E. REED, of Tovil, is on a visit to Canada, with the view of making an inspection of the sulphite works of the Dominion Pulp Co., and introducing improvements where deemed advisable.

BRUNNER, MOND AND CO., LIMITED.—The annual meeting of this company was held at Liverpool on Wednesday, Sir J. T. Brunner, M.P., presiding. The directors' report recommended a dividend of 25 per cent. on the ordinary shares, and the Chairman said that although this was a reduction of 5 per cent. from last year, he still congratulated them upon it, for the result of the Dingley tariffs had been to practically deprive them of the whole American trade. The report was adopted, and the retiring directors were reappointed.

CHANCE AND HUNT, LTD.—This company has been formed with a nominal capital of £280,000, for the purpose of acquring the businesses of the Oldbury Alkali Co., Ltd. (formerly Messrs. Chance Bros.) and of Messrs. W. Hunt and Sons, Wednesbury. An issue has been offered to the public this week of £120,000 4 per cent. first debentures of £100 each at the price of £102.

MESSRS. R. TULLIS AND CO., of Auchmuty Mill, Markinch, Fife, have recently placed an order for one of Lowden's live steam regulators. The European agents, the West End Engine Works, of Edinburgh, are receiving a large number of enquiries concerning Lowden's economical specialties for steam users (illustrated and described in our last issue), and many Scottish paper mills have already adopted them.

"VOLENITE."—A company has been formed to exploit an invention called "Volenite," a material to be used for insulating and other purposes, which is the outcome of a method and apparatus for saturating, vulcanising, and oxydising fibrous materials. The Volenite, Ltd., with a nominal capital £80,000 in £1 shares, acquires the patent (application) of Mr. Frederick Lamplough, and a non-exclusive license for Great Britain to manufacture fish oil in accordance with Mr. Stanley's patents for "improvements in or relating to the treatment of fish and fish offal and in apparatus therefor," for the purpose only of the manufacture of volenite, together with certain works. It is claimed that the following are a few of the uses to be found for volenite, which, it is said, can be produced at a very trifling cost and sold at a large profit:—Imperishable railway sleepers, railway carriage wheels, pulley wheels, friction wheels for hoists and clutch couplings, brake blocks, carriage panels, embossed panels for artistic internal and external decoration, electrical switch-boards, fuse bases, electric bell bases, magnet ends for dynamos, electric motors, and insulating material capable of resisting up to and above 70,000 volts pressure of electricity, according to thickness, accumulator cells, dry cells, Leclanche cells, plating cells, and vats, and many other articles.

FATAL ACCIDENT TO A PAPER MILL HAND.—At Bathford, Mr. S. Craddock, coroner for North Somerset, recently held an inquest touching the death of Walter Baldwin, aged 14, of Bewery-lane, Bathford. Deceased was employed as under carter at Bathford Paper Mills. The boy was found lying in the middle of Box-road with his head crushed. He was quite dead. The coroner said the only conclusion which could be arrived at was that the boy stumbled and a wheel of the waggon passed over his head. A verdict of accidental death was returned, the jury giving their fees to the boy's mother. Mr. S. Fox Andrews, chairman of the Bathford Paper Mills Co., Ltd., said on behalf of himself and the directors, that they were exceedingly sorry this sad affair had occurred. It was a very painful thing. He should ask the mother to allow them to bear the expenses connected with this matter, and they hoped to solace her somewhat by some continual help.

THE MACHINERY USERS ASSOCIATION.—Mr. Lewis Evans, Chairman of the Papermakers' Association, presided at the annual meeting of the Machinery Users' Association (of which he is chairman and hon. treasurer,) held, last week, at the Westminster Palace Hotel. The annual report showed steady progress during the past year, a strong footing having been obtained in districts and among industries not previously reached. The Royal Commission on Local Taxation would, the report further stated, be the means of collecting most valuable information. The President of the Commission, however, had stated that he did not think the evidence would be completed until the end of 1899. There had during the year been extensive revaluations for rating purposes of manufacturing property in Cardiff and Newport. In both these unions the Association acted for many of their members and with most successful results in all cases. The most interesting case of the year was an appeal brought by the North-eastern Marine Engineering Company, in the Tynemouth union, before the Northumberland Quarter Sessions. It would be remembered the Tyne boiler case arose in this union, and the special case on which Lord Esher gave his famous judgment on the rating of machinery was stated by the same court of quarter sessions. In the appeal of the North-eastern Marine Engineering Company both parties claimed to follow Lord Esher's judgment in arriving at their valuations, and the large differences between the figures of the witnesses for the appellants and the Assessment Committee showed the importance of the question to machinery users. The issue really was as to the amount of plant and machinery which, in the words of Lord Esher, was to be "taken into account as enhancing the value of the hereditament" and the method in which

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it was to be "taken into account." The Court, by practially adopting the figures put forward by the appellants' witnesses, endorsed the interpretation placed by the Association on Lord Esher's judgment to which the bill for defining the principles upon which machinery was to be rated sought to give legislative effect. In another question a special case was stated for the opinion of the Queen's Bench, and by the decision of that court collieries might now be treated as special properties, and evidence as to the results of the working of the colliery might be taken into consideration by the courts in fixing the assessment. This decision established a most important principle.—The Chairman, in moving the adoption of the reports and accounts, remarked that the Rating of Machinery Bill, had, before the Royal Commission of Local Taxation, been honorably mentioned, one of the witnesses, Sir H. Poland, having spoken of it as an admirably drafted measure and one well calculated to meet the wants of the case. He pointed out that there had been an increase in the annual subscription of the Association.—Mr. W. E. M. Tomlinson, M.P. for Preston, seconded the resolution, which was unanimously adopted, as were others in promotion of the objects of the Association.

ARBITRATION IN THE CHEMICAL TRADE.—A correspondent writes:—An important award has just been given in connection with arbitration proceedings between Messrs. Bowman, Thompson and Company, Limited, Northwich, on the one side, and Messrs. Brunner, Mond and Company and the United Alkali Company on the other, with regard to the increased production of salt at the works of the first named firm. Messrs. Bowman, Thompson and Company are under contract to consign all their make of chemicals to the United Alkali Company and Messrs. Brunner, Mond and Company, but latterly they have made arrangements to produce salt on a large scale, and this was objected to as coming also within the scope of such arrangement. The matter went to arbitration, with the result that the award has gone in favour of Messrs. Bowman, Thompson and Company.

THE "WINDSOR MAGAZINE."—The contents of the June number of this popular monthly will be found to be particularly entertaining, a brilliant contribution being a poem, entitled "The Destroyers," by Rudyard Kipling, with illustrations by C. J. De Lacy. Two opening chapters are given of Guy Boothby's serial, "Pharos the Egyptian," which promises to be of thrilling interest. "With Nansen in the North" readers have an account of the "Fram" expedition by Lieut. H. Johansen, and there is also included the latest portrait (from a photograph) of Dr. Nansen. Ernest E. Williams treats of South Africa, which concludes a series of most instructive articles on "The Imperial Heritage." "Jennie Baxter, Journalist," "The Emperor's Detective," and several short stories, as well as contributions on "Picturesque London," "Some Famous Cricketers," etc., afford very pleasant reading, and the illustrations are both numerous and of a high order.

THE CAIMA TIMBER ESTATE AND WOOD PULP COMPANY, LTD., advise us that they have removed their registered offices from Bloomfield House, London-wall, to 7, Poultry, E.C.

ACCORDING to a consular report the importation of pyrites for Ghent chemical works for 1897 amounted to 17,754 tons, an increase compared with the quantity of 1896 of 4,832 tons. Besides the usual supply from the Bay of Biscay ports, two cargoes arrived from Norway.

ACTION AGAINST PAPERMAKERS UNDER
The Employers' Liability Act.

At the Guildford County Court on Thursday, last week, before his Honour, Judge Lushington and a jury, a lad named Haynes, aged 17, claimed compensation under the Employers' Liability Act, from Messrs. Spicer and Co., paper manufacturers, of Godalming, in respect of an accident he met with at their works on February 22nd.

It appeared that the boy on the day in question was attending to his work as a drier boy when the paper got off one side of the drum, and in fixing it on the boy's foot slipped, and his left hand was caught in a cog wheel, several fingers being injured, one having to be amputated.

Mr. S. H. Terry, a member of the Civil Engineers' Institute and the Institute of Mechanical Engineers, inspected the machine, and he considered it dangerous.

For the defence Mr. Herbert Spicer said he had 30 years experience. The spindle and cog in question were the ordinary form and were always placed and worked in the way they were worked in this mill. Her Majesty's inspector was constantly at the mill and witness had given him notice of the accident.

His Honour, in addressing the jury, pointed out that if they considered the cog wheels dangerous the Act said they must be fenced whether convenient or not. In this connection they had to consider the evidence for the defendant as to the custom of the trade that these machines were in use in every mill in the country, and set against that Mr. Terry's evidence that he certainly considered the cog wheels dangerous.

The jury gave a verdict that they considered the cog wheels dangerous, and that the injury to plaintiff was caused by defendants' negligence. The damages were assessed at £100.

His Honour said the Act only permitted damages to the extent of three years wages, and the lad's wages being 11s. the damages were fixed at £85 16s., for which sum and costs his Honour made an order, remarking that Her Majesty's Inspector's attention would be called to the case.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

THE Water Powers and Industrial Estates Development Syndicate, Ltd., has been registered in London with a nominal capital of £25,000. We notice amongst the directors Mr. S. Philip Eastick, who has had considerable experience in connection with chemical wood pulp mills in Canada and the United States, as well as on this side of the Atlantic.

THE above syndicate has acquired the Follafos and Storfolden estates in Norway, comprising an area of about 85 English square miles.

THE directors propose to form a subsidiary company for the purpose of erecting mills and manufacturing both sulphite and mechanical wood pulp.

A SECOND subsidiary company is also under contemplation for the manufacture of calcium carbide and other products.

ACCORDING to a Swedish paper, the shipments of wood pulp from Gothenburg during Jan.-March of this year by the undermentioned firms were as follows:—

	Kg.
Axel H. Agren	5,439,739
Meurling, Nybelin and Co...	1,735,350
Comanditbolaget C. Fr. Waern and Co.	1,623,275
S. Renström and Co.	1,356,000
L. G. Bratt and Co.	1,301,775
Gustav von Reis	1,301,629
Chr. Christoffersens filial	1,282,500
G. Wall...	1,132,024
Ekman and Co.	394,650
Aug. Leffler and Son	218,960
J. O. Eriksson	117,900
C. R. Prytz	106,000
J. A. Kjellberg and Siner...	102,560
Fr. Corin	60,000
Carl Meyer	50,750
Andersson and Lindberg	36,000
John Lyon and Co	10,286
C. W. Lindegren	10,250

The total amounts to 16,279,648 kg.

THE Bergvik Co., Ltd., have decided to again take up the manufacture of chemical wood pulp. Arrangements are being made for the building of a new sulphite mill close to the old site in Sweden.

IN reporting on the wood pulp trade of Saxony the Chemnitz Chamber of Commerce states that serious losses were experienced through the floods of last summer. The full water power throughout the year, however, was greatly appreciated. Mills obtained rather better prices for their product.

THE wood pulp manufacturers of Saxony complain that owing to the competition of other countries their export trade is almost *nil*.

IMPORTS of American pulp are rather small just now. During the past week 630 bales were received at Leith from Portland.

SHIPPERS of pulp from America to England are experiencing a good deal of difficulty in finding boats. They are offering 16s. a ton for wet, which is a good deal higher than a few months back, but in spite of that there is scarcely any tonnage to be had. Ship brokers intimate that if the present scarcity of boats continues rates will go up to 18s. to 20s.

IN view of the uncertainty of sulphur supplies in the United States manufacturers have lately been giving their attention to pyrites ore. There are pyrites deposits in New Hampshire, Vermont, Massachusetts, New York, Virginia, Georgia and South Carolina. The ore mined in these localities yields from 40 to 48 per cent. sulphur. The most important foreign deposits are in Spain and Portugal.

IT is stated that ever since the formation of the Anglo-Sicilian Sulphur Trust, the price paid by the consumer in the United States has been 40 per cent. over and above what it would have cost him had he been using pyrites. This includes transportation.

TAKING the amount of sulphur used by fibre manufacturers as between 40,000 and 50,000 tons, and the average price paid for Sicily unmixed seconds as 23 dols., at 11·50 dols. a ton for pyrites the sulphite men could have saved about 550,000 dols. a year by using pyrites.

SEVERAL projects have lately been mentioned in relation to the development of the wood pulp industry of Canada, but the most prominent undertaking appears to be the Cushing Sulphite Fibre Co., Ltd., to which reference is made on another page.

MR. GEORGE S. CUSHING, of Messrs. Andre Cushing and Co., lumber merchants and mill owners, of St. John, N.B., has taken a very active interest in the matter, and considerable local support, we understand, is being given to the undertaking.

WE understand that the plans for the mill were prepared by Mr. James Beveridge, consulting engineer, of High Wycombe, who was formerly with the Ekman Pulp and Paper Co., Northfleet, and subsequently manager at the Hjerpen Sulphite Works, Sweden (Messrs. Thomas Owen and Co., Ltd.).

AT first machinery will be installed to produce 28 tons of sulphite per day. Arrange-

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ments, however, have been made to provide for an output of 56 tons.

THE estimated annual profit on the ordinary capital to be issued is 26 per cent.

THE cost of manufacturing is stated to be 31.25 dols. per ton (of 2,240 lbs.), which includes freight and insurance to Great Britain and selling commission.

THE selling price is given as 38 dols. per ton, delivered f.o.r. Great Britain.

TAKING 300 working days these figures give a margin of 56,700 dols. for the year.

ALLOWING 12,500 dols. for depreciation of machinery and plant and 5,000 dols. for dividend on preference shares (being an issue of 2,000 shares of 50 dols. each), there is a surplus of 39,200 dols., or, as stated above, a return equal to 26 per cent. upon the ordinary capital issued (3,000 shares of 50 dols. each).

FROM St. John during the past week 2,732 bales were landed at London, and another lot of 600 bales to the order of the Dominion Pulp Co. At Liverpool 2,800 bales were received from Montreal.

FIRE AT A LONDON RAG WAREHOUSE.—A fire of great magnitude occurred about ten o'clock on Thursday night, last week, in Little Sutton-street, Goswell-road, upon the premises of Messrs. Mark Bromet, rag and woollen merchants. Several adjoining warehouses were involved, including Sir Joseph Causton's show-card factory. Owing to the inflammable nature of the material which fed the flames, the fire brigade experienced the greatest difficulty in checking the conflagration, which ran along the narrow streets with the greatest rapidity. Mr. Mark Bromet states that the fire will not materially interfere with business, as he has another warehouse in London, and also in Glasgow and Leeds. The damage is not entirely covered by insurance.

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TRADE MARK.
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STRAW PULPS,
Bleached and Unbleached,
All Qualities and all Processes.

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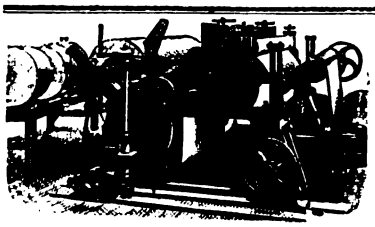
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GERMANY.

FANCY AND SURFACE PAPERS.—German manufacturers of fancy and surface papers appear to have been severely handicapped in their export trade with America, owing to the high tariff. Exports to other countries, however, remain fairly steady. Complaints are made that prices have gone down considerably.

THE ALTENKIRCHEN PAPER MILLS, belonging to Herren Ferdinand Zagenberg and Sons, have been entirely destroyed by fire. About 200 workpeople have been thrown out of work.

THE INLAND NAVIGATION of Germany will be greatly improved by the communication between the three rivers—Rhine, Weser and Elbe. As paper and pulp mills are always close upon rivers these canals will be of a great help in procuring lower rates of freight on raw materials, as well as on the manufactured article. The difference between railway carriage and the shipping rate is about as much as forty to one. The minimum per ton and kilo. on canals is between one and two pfening (or about a tenth to an eighth of a penny), and the railway rate between 20 and 22 pfening (or about twopence). There are here and there exceptional rates, but though they may reduce they cannot entirely take off the inequality. The advantage to the paper-makers must be enormous, not only in the exportation, as the long distance railway journeys would be avoided, but the inland consumption would be more equalised, as mills would be able to find their customers at greater distances without incurring the heavy carriages they have to pay at present.

BELGIUM.

AT PRESENT there are in Belgium sixty-eight mills and factories in activity, employing 7,420 workmen, with a total annual output of £1,489,400. An analysis of these figures shows that there are seventeen factories of miscellaneous paper, with 4,500 workmen and an output of £810,600, weighing a total of 57,750 tons. There are engaged in the manufacture of wrapping paper thirteen establishments, with 700 workmen and an annual production of 26,950 tons, valued at £231,600. Fifteen factories make cardboard to the extent of 8,800 tons annually, with a value of £38,400. Wall paper is manufactured by twelve establishments, employing 340 workmen, with an output valued at £87,320, amounting to 8,700,000 rolls. Playing cards and coloured papers are produced by eleven factories, giving work to 1,550 men. The quantity of their products is 600,000 reams of paper and 220,000 gross of playing cards, valued in the total at £321,460.

THE import of chemicals at Ghent last year amounted to 38,907 tons. They included carbonate of soda, caustic soda, chloride of lime, sulphate of ammonia, sulphate of soda, etc., all from the British Isles; and phosphate rock, and nitrate, from Florida and Peru respectively. The decline of 6,603 tons during 1897, compared with 1896, turns upon nitrate imports; for, while in fact chemicals from British ports increased, as also phosphate rock from Florida, there was a falling off in nitrate imports to the extent of 9,938 tons.

PAPER and strawboards were exported from Ghent last year to the extent of 2,230 tons, the quantity in the previous year being 1,887 tons.

UNITED STATES.

THE exports of paper at New York, according to the last weekly list received, included the following:—To London, 63 bundles and 3,554 packages; Liverpool, 14 packages and 324 cases; Manchester, 596 bundles, 247 packages, and 1 case; Newcastle, 112 packages; Hull, 247 packages; Dundee, 79 packages and 202 bundles; and Glasgow, 102 rolls. Shipments to Antwerp were 3 rolls and 40 cases; Amsterdam, 1 package; Bremen, 4 cases; Havre, 1 case; Hamburg, 8 cases; Rotterdam, 3 cases; Argentine, 4 packages; B. Guiana, 247 packages; B. W. Indies, 253 packages; Brazil, 311 cases; Australasia, 222 packages; Africa, 18 cases; Japan, 83 packages; and Mexico, 1,517 packages.

PNEUMATIC COUCH GUARD.—Mr. McMurray, a machine tender at the Fitchburg Paper Co., Fitchburg, Mass., U.S.A., has recently devised a couch guard, consisting of a rubber tube which is placed between the edge of the back board and the strips of old jacket. A sheet steel clip, running the entire length of the board, is first screwed to the back board, then the tube is laid in place and pumped up with an ordinary bicycle pump until the tube is hard enough to put the necessary pressure on the couch roll. As the tube is made a little more than 2 inches in diameter the adjusting screws of the wooden back board are dispensed with and the board is fastened solid, about 1¾ inches from the couch roll. Then when the tube is pumped up, no matter how many inequalities there may be in the edge of the board, the air in the tube fills them all, and also puts a nice even pressure on the couch roll jacket. It has not been found necessary to pump up the tube very hard, and a great and unnecessary pressure can be put on the roll in this manner by pumping up the tube too much. Indeed, it is easy to put on pressure enough to "drag the jacket" and have as bad an effect as comes from the old deckle strap or maple edge method.

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A GERMAN EXPERT
ON
AMERICAN FOURDRINIERS.

Mr. E. Kirchner, a well-known German engineer, and for many years manager of German paper mills and director of the German Technical Institute for Papermakers, writes in one of the foreign trade papers as follows:—"Some time ago I was afforded the real pleasure, from a practical point of view, of having the opportunity of inspecting the new 100 inch wide American Fourdrinier papermaking machine, with the complete papermaking plant, in Kriebethal (Saxony). This machine would surprise anyone through its mighty extension and as a masterpiece of workmanship, as well as through its great production. The drying apparatus of this machine has 24 cylinders of over 4 feet diameter each, and 6 cylinders of over 2½ feet diameter each. The total diameter is therefore about 120 feet. When I saw this machine working it was running 260 feet per minute; however, according to information which I have since received, it is now running 330 feet per minute, and pulleys are ready to be put on to work the machine at a speed of 400 feet per minute. Three powerful beaters of ½-ton contents each, and one edge runner, are supplying the machine with the necessary pulp. This is the third American Fourdrinier papermaking machine which the well-known firm of Kuebler and Niethammer, of Kriebstein, the largest manufacturers in Germany of news paper, have erected, and due honour must be paid to the engineers who made it. Many ingenious ideas of German knowledge and thoroughness are happily and harmoniously united with the latest American progress. It was a true pleasure, and offered me in the highest degree an opportunity of extending my knowledge by inspecting these tremendous large works, and to have every novelty explained to me by one of the firm's staff, who affably called my attention to the many novelties introduced in this American machine."

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"We are very pleased to be able to inform you that we are moving along, having doubled our turnover in two months, for which we give your paper the credit."—TAYLOR & WATKINSON, Leeds.

"As a medium for advertising it is second to none."—H. S. CROPPER & Co., Nottingham.

"The best of our trade journals as an advertising medium."—THE ARTISTIC STATIONERY Co., London.

"In answer to our FIRST advertisisement we have received about *twenty* replies."—R. ROBINSON & Co., Newcastle-on-Tyne.

"An advertisement in your colums is a good investment."—W. H. HASBROUCK, New York.

"We received over 250 enquiries within a day or two from that single advertisement, and the orders which have followed it render it inadvisable for us to renew the advertisement at present as we are oversold."—SAQUI & LAWRENCE, London.

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"Occupies a very foremost place."—*Daily Chronicle*, London.

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"Full of matter interesting to printers."—*Financial Times*, London.

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"I think very highly of your journal, and read it with great pleasure, as do all of our firm.—MORTON, PHILLIPS & BULMER Montreal.

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The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

Established 1879.

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by W. JOHN STONHILL,
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Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, MAY 27, 1898.

The Proposed "Combine."

HEADWAY is not being made in connection with the proposed combination of British "news" mills at a very rapid rate, and the delay in the matter gives rise to various rumours that a consummation will not take place. At the last meeting in London no definite arrangements were arrived at, and the representatives of the mills interested decided upon a further adjournment.

* * *

The Workmen's Compensation Act.

IN regard to this Act paper mills rank very high in the matter of premiums charged by the insurance companies, a general rate, as stated in our last issue, being £1 5s. for every £100 paid in wages. Paper stainers drop down to 15s., but for engineers (shop only) the premium is as high as £1 10s., and for (outside work, ordinary), £2 5s. According to Mr. Chamberlain the premiums which are now asked for insurance by these companies exceed his calculation threefold, fivefold, and even tenfold; for instance his estimate for engineers is from 5s. to 10s. per cent. Naturally, the insurance companies feel indignant at Mr. Chamberlain's observations, and one correspondent writes: "The competition which Mr. Chamberlain invites has always existed, and has always been sufficiently keen to prevent profits of 300 or 400 per cent. from even being dreamt of. Employers may accept the advice tendered and carry their own risks, but whether they will ultimately have cause to feel grateful for it is another matter." Compared with the rates mentioned above some of the premiums quoted by the non-tariff offices show a reduction of 25 to 50 per cent. It is important that employers should be covered, and as the Act comes into force on the 1st of July no time should be lost in the matter. As there is some doubt in the minds of some of our readers as to the application of the Act, we shall be pleased to publish answers (by a Barrister-at-law) to all questions that may be submitted to us. "Rag Merchant" wants to know whether ordinary marine stores (including rag sorting and cutting by hand and paper sorting) come under the Act? The following reply, no doubt, will interest many in the paper stock trade:—

> An ordinary marine-store, in which rag-sorting, cutting by hand, and paper-sorting are carried on, does not come under the Compensation Act, unless steam, water, gas, or other mechanical power is used to work machinery on the premises or within the close or curtilage thereof. A flywheel worked by hand or animal power is not "mechanical power" within the meaning of the Act. By section 7 the word "factory" includes any *Warehouse* to which any provision of the Factory Acts is applied by the Factory and Workshop Act, 1895. Therefore, under this far-reaching definition, if the marine-store referred to is also used as a warehouse in which goods are stored wholesale for purposes of trade—thus coming under the jurisdiction of the Factory inspector in a double sense—the Compensation Act would apply.

An excellent handbook (in its fifth edition) on the Workmen's Compensation Act, 1897, is that by M. Roberts-Jones, Barrister-at-Law. The subject is treated in a very concise manner, and the explicit explanations given will serve as an admirable guide to both employers and employed.

* * *

American "News."

THE enormous home demand for American "news" has caused manufacturers to give more attention to local requirements, and consequently there has been a falling off in exportation to Great Britain, which must have beneficially affected British "news" mills during the last month or two. Some of the London wholesale firms of stationers are responsible for fostering the exports of American paper to this country, sending representatives to the States to make

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arrangements for agencies, etc. In regard to American "news," the Manufacturers' Paper Co., of New York, do a large direct business with Great Britain, the company having warehouses and offices in Shoe-lane, E.C. Mr. K. B. Fullerton, who is at the head of the Manufacturers' Paper Co., at New York, in speaking of the export trade, stated recently:—"We are not shipping as much abroad as we were. We are only filling our best orders. These we are holding on to, but the others we are letting slip. We are doing only about from two-thirds to three-fourths the amount of business in England to-day that we were before the war began. We find it more profitable to sell our paper in the home market, where the demands made upon us at this time are unusually large and exacting. There is no dearth of news paper in the English market yet, so far as I have been able to learn, though there may be if this war lasts for any considerable time and shipments of paper from the United States continue to grow smaller." Mr. W. H. Parsons, sen., of W. H. Parsons and Co., speaking on the subject of exportation, said:—"We are not shipping as much American paper abroad as formerly, because of the better demand and better prices obtainable here. Then, too, the English and Scandinavian mills are quoting lower prices, and we are experiencing some difficulty in getting freight room. We are not taking orders for export as freely as we were. I am speaking now of the English export trade solely. Our Australian business has not been interfered with in the least." Major J. Fred. Ackerman, of Perkins, Goodwin and Co., reports as follows:—"We are accepting orders from our London representative and are filling them much the same as formerly. I do not think it good policy to sacrifice any of our English customers at this time, because when this war demand is over we might experience considerable difficulty in getting them back again." The war has undoubtedly had a good effect on the market for "news," and has greatly benefited the International Paper Co. Before the combination was effected news was selling for 1.60c., whilst to-day the company is asking from 2.25 to 2.40 at the mill for its product. Of course it doesn't pay to ship American news paper abroad for 2c. less 5, when 2.25 is to be obtained at home.

* * *

Developing the Canadian Export Trade.

AN advice from Toronto states that the Minister of Trade and Commerce recently stated that the Government had under consideration the proposal to appoint special trade commissioners to reside at various trade centres in the United Kingdom, in order to promote the sale of Canada's products on the British markets. There was the High Commissioner in London, but as his office is largely of a diplomatic character, he could not be expected to give due attention to the commercial interests of the country. Sir Richard Cartwright further informed the House that one of the members of the Government would visit the United Kingdom at the close of the session, to see what the likelihood was that trade commissioners would really be of use to Canada there. One of the lines in which it is believed such a consular service would promote a demand for in the Mother country would, it was stated, be paper.

THE PORT OF ST. JOHN, N.B.—A large proportion of the British imports of Canadian wood pulp comes from St. John, and, owing to efforts being made locally, and the establishment of new factories, headway is likely to be fairly rapid in the near future. On Tuesday last Mr. Alderman George Robertson, the Mayor of St. John, gave, before a special meeting of the London Chamber of Commerce, an address on "The Development of the Export and Import Trade between Great Britain and Canada through the Port of St. John, New Brunswick." He said he had been commissioned by the corporation of his city to visit this country and explain the trade advantages afforded during the winter by the port of St. John. It was no easy matter to divert trade from any well-established route, but he was proud to say his city had done something in that direction. The combined export and import trade of the port of St. John, which in 1895 amounted to 6,860,602 dols., had increased to 9,720,949 dols. in 1897, and he believed that when the figures for 1898 were published they would show a material advance on those for 1897. It was possible to convey passengers and goods from Liverpool to the centre of the North American Continent *via* St. John in ten hours less time than it would take by the New York route. The city of St. John had spent 1,000,000 dols. in providing shipping facilities, but before the port could be regarded as properly equipped a graving dock capable of accommodating our largest battleships was required.

AT a sale of stocks and shares at Bury last week the following lots were included:—25 Pref., £10 each, fully paid, East Lancashire Paper Company, Limited, £8 5s. each; 20 Orig., £10 each, fully paid, same company, £8 2s. 6d. each; 130 Bonus £5 each, same company, £3 18s. 6d. each. 20 Shares, £5 each, £3 17s. 6d. paid, Burnley Paper Company, Limited, £6 each.

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IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

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Situations Vacant.

PAPER TRADE.—Wanted, an energetic and experienced Foreman to take charge of Cutting, Glazing, and Reeling Department. None but efficient men need apply.—John Wild and Sons, Radcliffe, near Manchester. 7286

WANTED, competent Man to take charge of Bag Machine (Strachen and Henshaw's) Department in large paper mill.—Reply, No. 7,288, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7288

WANTED at once, good Man for Supercalender. Must be steady, industrious and reliable, with good references. State wages.—Address, No. 7,293, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7293

Situations Wanted.

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

MANAGER now open to Re-engagement; 15 years' experience as such in first class mills. Good papermaker, with thorough knowlege of rags, esparto, and wood pulps; experience of limited companies, and used to entire control. Active and energetic; age 42; good references.—Address, No. 7,278, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7278

MANAGER wants Re-engagement; practical papermaker, any class; active and energetic; good references.—Address, No. 7,287, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, E.C. 7287

WANTED, Situation as leading hand on Cutters, Reelers and Supercalenders; 15 years' experience in first-class mills. Good references as to character and ability.—Address, No. 7,291, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7291

WANTED, Re-engagement as Manager or Foreman, in mill making tub-sized writing papers; used to all qualities and modern methods of manufacture. Age 44; active and energetic; good references as to character and ability from first-class mills.—Address, No. 7,271, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7271

Machinery.

PAPERMAKING MACHINE Wanted, over 72-in. wide; must be in good condition and strong for fast running.—Address, No. 7,289, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7289

STEAM BOILER, semi-portable, locomotive type, Wanted, about 30-n.h.p.; and small Steam Engine, about 8-in. cylinder; both in good order. At once.—Address, No. 7,290, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7290

Miscellaneous.

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

PAPER MILL for Sale.—Brown Paper Mill in Scotland; 64-inch Machine; Steam and Water Power.—Particulars on application to No. 389, Keith and Co., Advertising Agents, Edinburgh. 7292

SULPHITE CELLULOSE MILL for Sale in Sweden, 1,200 tons dry pulp yearly. Delightfully situated.—Address, No. 7,279, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7279

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Stocks and Shares.

Markets are much quieter owing to the near approach of the holidays, but notwithstanding changes have been mostly in an upward direction. North of Ireland are firmer on the reported successful issue of the "combine," but are unchanged in price. Kellner-Partingtons (part paid) seem stronger at a fresh advance of $\frac{1}{16}$. Peebles ord. also are quoted $\frac{1}{8}$ higher, and a transaction recorded $7\frac{7}{8}$. Bergvik pref. have risen $\frac{1}{2}$, and Kellners debs. 1. Roach Bridge are, however, easier at a fall of $\frac{1}{8}$ on the week.

In chemical shares, Brunner, Monds ord., after fluctuations, are finally $\frac{1}{2}$ down on the week, and "new" also $\frac{1}{2}$, and a fall of $\frac{1}{8}$ is noted in "new" pref. United Alkali continue stronger at an advance of $\frac{1}{8}$ in pref. and of $\frac{1}{16}$ in ord.; the deb. stock is also better by $\frac{1}{2}$. F. Steiner's debs. and Bowman, Thompson's debs. are each up 1. In Castner-Kellners several transactions are recorded, and after being 24s. 6d., are to-day unchanged from last week's quotations.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices May 25th.
10	10	Bath Paper Mill Co. (Ld.)	5	11⅜—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	12⅜—13½
3¾	5	Burnley Paper Co. (Ld.)	10	5—6½
7	7	Bury Paper, ord. ,,	6	6¼—6⅝
7	7	do. 6% pref. ,,	6	7⅛—7⅜
2⅞	3	Collin (Darwen) Paper ,,	nil	⅛—¼
5	5	Darwen Paper Mill Co. "A"	15	11½—12
3¾	5	do. do. "B"	15	9—9½
10	10	E. Lancashire Paper Co. Ld.	nil	7½—8
10	10	do. do. 6% pref.	nil	6½—8¾
5	5	do. do. bonus	nil	4—4¼
100	100	Ekman Pulp & Paper Co. Ld. debs	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	5¾—7
5	5	Hyde Paper Works Co. ,,	nil	⅛—⅜
2¾	5	Kelln'r-Part'g't'n P'p Co,,	12*	¾—8⅛ x d.
5	5	do. do.	12*	14—14½ x.d.
100	100	do. do. debs.	4½	106—108
4	5	N. of Ireland Paper Co. ,,	12½	3½—8¾
7	10	Olive Brothers ,,	10	7—7½
1	1	Owen, T. & Co. 6% pref	6	26/6—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
100	100	do. do. debs.	5	112½—113½
5	5	Peebles (A. M.) & Son ,,	8½	7⅞—8
5	5	do. 5% cum. pref.	5	5¼—6½
100	Stock	do. 4½% deb. issued 105	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	7—7½
1	1	do. do. cum. pref.	5	1⅛—1½
4½	5	Roach Bridge Paper Co. ,,	10	5⅜—5⅝
5	5	Star Paper Co.	10	⅜—8¾
3	5	do. do. cum. pref.	10	4—6¼
0	10	Waterlow & Sons non.-cum. def.	—	13¾—14¼
		do. do. non.-cum. pref.	4	13¾—14¼
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	6⅞—6⅝
10	10	do. do. cum. pref.	7	10½—10⅝
100	100	do. do. debs. (red. 1904)	6	105—107
10	10	Brunner, Mond & Co. (Ld.)	20	39—39⅛
3½	10	do. do. "New" ,,	20	15⅝—15⅞
10	10	do. do. 7% pref. ,,	7	17⅜—17⅝
5	10	do. do. do. new issue	7	8⅛—8¾
1	1	Castner-Kellner Alkali Co	—	23/—24/-
5	5	Clayton Aniline cum. pref.	6	5⅛—6
10	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11⅜
100	Stock	do. do. deb. stock (red. 1912).	4	105—107
10	10	United Alkali Co. ,,	2	1⅞—1⅞
10	10	do. do. cum. pref.,,	7	8⅛—8¾
100	Stock	do. mort. deb. (red. after 1901)	5	108½—108½

* Interim.

ANNUAL OFFICIAL

Directory of French & Foreign

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This work, arranged on an entirely new plan, with the active co-operation of Papermakers and Paper Mill Managers, contains (in French) a List of Papermakers, with the Number of Machines in each Mill and the Class of Paper made; also a List of Paper Merchants, and a number of Illustrated Articles on Technical Subjects connected with the Paper Trade. The work is subdivided into sections and contains, among other information, the following:

- Raw Material, with Tables of Prices, &c.
- Paper Mill Management and Accounts.
- Alphabetical Table of French Papermakers.
- Ditto, in Departments.
- List of Railway Stations in France adjacent to Pape Mills, with the Distance from Paris.
- List of Foreign Papermakers.
- Preparation of Wood Pulp. Bleaching.
- Sizes and Classification of Papers.
- Old and New Customs Tariffs on Goods Connected with the Paper Trade.
- Prices of Papers.
- List of the Principal Contracts for Paper placed durin the Year. Etc., Etc.

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Office of the WORLD'S PAPER TRADE REVIEW,
Telegrams: "STONHILL—LONDON." *58, Shoe Lane, London, E.C.*

MARKET REPORT.

IMPORTS AND EXPORTS OF

All Classes of Paper Stock

at the Ports of

LONDON	BARROW	HARWICH	GRANTON
LIVERPOOL	GOOLE	DOVER	GRANGEMOUTH
MANCHESTER	GRIMSBY	FOLKESTONE	DUNDEE
RUNCORN	BRISTOL	GLASGOW	BONESS
FLEETWOOD	HULL	GREENOCK	Etc., Etc.
PRESTON	SOUTHAMPTON	LEITH	

For the Week ending Tuesday last.

FROM SPECIAL SOURCES AND TELEGRAMS.

CHEMICALS.—The chemical market continues quiet. Prices are fairly firm, and for 58 per cent. AMMONIA ALKALI there is an advance of 5s. per ton. CAUSTIC SODA is dull, 77-78 per cent. standing at £8 5s. to £8 10s. and 70 per cent. £7 to £7 5s. BLEACHING POWDER is quiet at £5 5s. to £5 10s. per ton soft wood. SODA ASH steady. SULPHUR firm. Foreign chemicals are unchanged.

Quotations are nominally as follows:—

Alkali, Ammonia, 58%	...	f.o.b. Liverpool		£4	5	0
,, ,, 48%	...	,, ,,		4	0	0
Alum (Ground), tierces	...	,, ,,	2½%	5	5	0
,, barrels	...	,, ,,	2½%	5	15	0
,, tierces	...	,, Hull	2½%	5	2	6
,, ,,	...	f.o.b. Glasgow	2½%	5	5	0
,, (Lump) ,,	...	f.o.b. Liverpool	2½%	4	12	6
,, barrels	...	,, ,,	2½%	4	15	0
,, tierces	...	,, Hull	2½%	4	12	6
,, ,,	...	London	2½%	5	2	6
,, ,,	...	f.a.s. Glasgow	2½%	4	12	6
Alumina Sulphate ...	...	f.o.b. Tyne	net	3	11	3
Aluminoferric Cake, slabs	...	Liverpool		2	15	0
,, ,, tierces		,,		3	2	6
Alumina Cake, slabs...	...	Glasgow		2	10	0
Blanc Fixe	...	f.o.b. Tyne	no	6	15	0
Bleach	...	,, ,,	net	6	0	0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5	0
,, (hard wood)	...	f.o.b. Liverpool	net	6	0	0
,, (soft wood)	...	landed London	net	6	5	0
Borax (crystals)	...	... ...	net	14	0	0
,, (powdered)	...	... ...	net	14	10	0
Chloride of Barium	...	f.o.b. Tyne	net	6	12	6
Caustic White, 76%	...	,, Liverpool	net	8	7	6
,, ,, 74%	...	,, ,,	net	8	2	6
,, ,, 70%	...	,, ,,	net	7	10	0
,, ,, 70%	...	f.o.r. Lancs.	net	7	7	6
,, ,, 60%	...	f.o.b. Liverpool	net	6	10	0
,, Cream, 60%	...	f.o.r. Lancs.	net	5	15	0
,, 60%	...	f.o.b. Liverpool	net	5	17	6
,, Bottoms, 60—62%	...	f.o.r. Lancs.	net	4	12	6
Soda Ash, Carbonated, 58%	...	f.o.b. Liverpool	net	4	15	0
,, ,, 48%	...	,, ,,	net	4	12	6
,, ,, 58%	...	f.o.r. Widnes	net	4	10	0
,, ,, 48%	...	,, ,,	net	4	5	0
,, Caustic, 48%	...	f.o.b. Liverpool		4	12	6
,, ,, 57-58%	...	,, ,,		4	17	6
Hypo-Sulphite of Soda ...		f.o.r. Tyne		4	15	0
,, (10 ton lots)		ex ship Lirerp'l	net	5	0	0
Oxalic Acid	...	f.o.b. Liverp'l	3½%	per lb.		3
Salt Cake	...	on rail, in bulk		1	0	0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35	0	0
,, (2nds)	...	,, ,,		33	0	0
Soda Crystals	...	,, Tyne	net	2	17	6
,, ...	...	ex ship Thames	2½%	2	17	6
,, ...	...	f.o.b. Liverpool	5%	3	0	0
Sulphur, rolls	...	f.a.s. works	2½%	6	5	0
,, flowers	...	,, ,,	2½%	7	5	0
,, recovered	...	,, ,,	2½%	5	0	0
Sulphate of Ammonia ...	...	,, ,,	2½%	9	10	0
,, Copper	...	,, Liverpool	5%	16	5	0

FOREIGN.—*F.o.b. Continental Ports:*

Hypo-Sulphite of Soda, 10-ton lots casks ...	...	4	10	0
Sulphate of Alumina, 7-8 cwt. casks net c.i.f. L'd'n		3	15	0
Blanc Fixe (c.i.f. London)	...	7	0	0
White Sugar of Lead	...	27	0	0
Zinc Oxide	...	19	5	0
Bleaching Powder	...	5	15	0

CHEMICAL WOOD PULPS.—SULPHITE is in good demand and prices are well maintained. SODA pulps steady.

GREAT BRITAIN.

Prices, ex steamer, East Coast, are nominally as follows:—

Sulphite, Unbleached, Common	£8	12	6 — 9 0 0
,, ,, Superior	9	5	0 — 9 10 0
,, Bleached	11	10	0 — 15 0 0
Soda, Unbleached, Common ...	8	5	0 — 8 10 0
,, Extra... ...	8	15	0 — 9 5 0
,, Bleached	10	10	0 — 12 0 0

SCANDINAVIA.

Sulphite, Prime, f.o.b.	Kr. 160
Sulphate, f.o.b.	Kr. 120 — Kr. 140

FRANCE.

C.i.f. Rouen per 100 kilos. (2 cwt.).

Bisulphite, Unbleached, dry, 1st quality	Frs. 22.75— 23.5
,, Bleached	33 — 36
Soda and Sulphate, Unbleached, 1st quality...	21 — 22
,, ,, 2nd quality...	19 — 19.50
,, ,, Bleached ...	27 — 34

UNITED STATES.

Sulphite, American, Unbleached ...	$1¾ — 2
,, Foreign, Bleached	3.15 — 3.50
Soda, American, Bleached	1.90 — 2.10
,, Foreign, ,, ...	2.70 — 2.80
,, ,, Unbleached	2.10 — 2.15

MECHANICAL WOOD PULP.—Very little business has been negotiated during the past few weeks owing to the higher prices demanded by the Scandinavian manufacturers. Papermakers hold off, many having good stocks on hand and they also look to Canadian pulp coming in regularly to meet their requirements. Prices are firm, being £4 7s. 6d. for Dry Pine and £2 6s. 3d. for Moist.

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GREAT BRITAIN.

Quotations, ex steamer, East Coast, are nominally as follows:

Aspen, dry			£6 10 0
Pine, dry	£4 8 9	—4 12	6
,, moist	2 5 0	—2 7	6
Brown, dry			4 15 0
,, moist			2 10 0

FRANCE.

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos. (2 cwt.).

Pine, 50% moisture, ordinary	Frs. 9.50—10.50
,, ,, fine	11 —12
,, dry, ordinary	10.50—11
,, ,, fine	11 —12
Aspen ,, fine	15 —16.50
Brown (half-chemical), 50% moisture	10.75—11.25
,, ,, dry	11.75—12.25

UNITED STATES.

F.o.b. Mill, nearest port (per 2,000 lbs.)... 13 dols.

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
4780 bales	Drammen	E. Lloyd	London
800 ,,	,,	G. Busche	,,
34 ,,	Rotterdam		,,
100 ,,	Ghent		,,
20 ,,	Christiania	Green and Co	,,
164 ,,	,,	Taylor and Co	,,
138 cases	Drammen	F. E. Foulger	,,
400 bales	,,	Green and Co.	,,
250 ,,	,,		,,
160 ,,	,,	Tough and Henderson	,,
200 ,,	,,	Johnsen and Jorgensen	,,
820 ,,	Hambro		,,
50 cases	Marseilles		,,
596 bales	Fredrikstadt		,,
400 ,,	,,		,,
250 ,,	Skein	London Paper Mills Co	,,
90 ,,	,,	W. G. Taylor & Co	,,
308 brls.	Ghent		,,
400 bales	Gothenburg	Tough & Co.	,,
30 ,,	,,	G. F. Green	,,
70 ,,	,,		,,
82 rolls	,,	R. L. Lundgren	,,
272 bales	,,	H. Pearsall	,,
160 ,,	,,	Hagborg & Co	,,
10 ,,	,,	Henderson & Co	,,
340 ,,	,,		,,
2732 ,,	St. John's		,,
600 ,,	,,	Dominion Pulp Co	,,
21 ,,	Rotterdam		,,
155 ,,	,,		Liverpool
2800 ,,	Montreal		,,
1399 ,,	Christiania		Hull
100 ,,	Gothenberg		,,
769 ,,	Drontheim		,,
300 ,,	Trieste		,,
147 ,,	Hambro		,,
25 ,,	Rotterdam		,,
1238 ,,	Gothenburg		Manchester
52 ,,	Rotterdam		,,
4066 ,,	Sarpsborg		,,
1946 ,,	Gothenburg		,,
90 ,,	Rotterdam		Goole
100 ,,	Ghent		,,
3·6 ,,	Hamburg		Leith
630 ,,	Portland		,,
497 ,,	Gothenburg		Granton
648 ,,	,,		,,
1614 ,,	Christiania		Grangemouth
6206 ,,	Gefle		,,
2018 ,,	Fredrikshald		Grimsby
4366 ,,	Skein		Preston
3958 ,,	Drammen		,,

Totals of Wood Pulp from Each Country:

AUSTRIA ...	300 bales	HOLLAND ...	337 bales
BELGIUM ...	200 ,,	NORWAY ...	21434 ,,
,, ...	308 brls.	,, ...	128 cases
CANADA ...	6132 bales	SWEDEN ...	15983 bales
FRANCE ...	50 cases	,, ...	82 rolls
GERMANY ...	1273 bales	U.S.A.	630 bales

STRAW PULPS.—Fair demand.

Prices, c.i.f. London, Hull, or Leith:

German, dry, No. 1	£14 0 0
,, No. 2	13 0 0

STRAW.—Prices:

Oat, c.i.f. London ...	£1 17 0	F.o.r. Goole ...	£1 17 6
Wheat ,, ...	1 17 0	,, ...	1 17 0
Rye ,, ...	2 10 6	,, ...	2 10 6

ESPARTO.—There is no change in the condition of the market which remains very quiet with little enquiry for any description. Sellers, however, do not press for orders and quotations are nominally unaltered. Steamers still remain scarce and the month's import is likely to turn out small.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston, and Tyne Docks, are nominally as follows:

Spanish—Fair to Good	£4 17 6	—5 5 0
Fine to Best	5 10 0	—5 15 0
Oran— Fair to Good	2 17 6	—3 0 0
First Quality	3 5 0	—3 7 6
Tripoli— Hand-Picked	3 0 0	—3 2 6
Fair Average	2 15 0	—2 17 6
Bona and Philippeville	3 5 0	—3 17 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
1050 tons	Arzew	R. H. Hay and Co	Granton
473 ,,	Bona	Crookston Bros	,,

HOME RAGS.—The reports from various centres indicate a steady demand. Fines, Outshots and Seconds particularly being in good request. Stocks are small.

LONDON.

N. White Cuttings ...	18/0-22/0	Canvas No. 1 ...	14/0-15/9
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London) ...	17/0-17/6	,, No. 3 ...	5/0
Outshots (selected)	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary)	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country ,,	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country ,, ...	2/0	Gunny	2/0-2/3

BRISTOL.

Fines	16/0	Clean Canvas ...	14/0
Outshots	9/6	Second ,, ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging ...	2/6	Tarred Manilla ...	6/0

MANCHESTER.

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares ...	2/6-3/0

EDINBURGH.

Superfines	15/0	W. Manilla Rope	7/0
Outshots	12/0	Tarred Manilla Rope ...	5/6
Mixed Fines ...	14/0	,, Hemp Rope	8/0
Common Seconds	7/0	Rope Ends (new)	6/0
First ,,	10/0	,, ,, (old)	4/0
Prints	5/0	Bagging	2/3
Canvas (best) ...	15/0	,, (clean) ...	3/0-4/0
,, 2nd ...	8/0		
Black Cottons ...	2/6		

GLASGOW.

Fines	12/6-16/0	Canvas No. 1 ...	15/0
Blues	4/6	,, No. 2 ...	10/0
Common Blues ...	3/3	Manilla Rope ...	8/0
Bagging	4/0	Tarred Hemp ...	9/0

DUBLIN.

White Cuttings ...	16/0	Mill Bagging ...	2/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp ...	6/0
Light Prints ...	2/6	Rigging	10/0
Black ,, ...	1/6		

WASTE PAPERS.—Market firm.

Cream Shavings ...	10/0	Small Letters... ...	3/3
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns ...	3/3
White Waste	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets	3/0
Blue Paper	2/0	Strawboard Cuttings	1/0
Crushed News ...	2/0	Jacquards	2/6

For Export: 25s. per ton extra.

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FOREIGN RAGS.—French and Belgian stock is in good request. The demand for German rags is quiet. The arrivals at British ports during the past week were as under:

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
74	Marseilles	Hull	147	Ghent	Goole
147	Leghorn	,,	316	Boulogne	,,
207	Copenhagen	,,	128	Rotterdam	Grimsby
41	Christiania	,,	420	Dieppe	,,
55	Ghent	,,	64	Hambro	,,
61	Harlingen	,,	46	Boston	Liverpool
138	Hambro	,,	148	Smyrna	,,
48	Rouen	,,	285	Alexandra	,,
57	Konigsberg	,,	8	Rotterdam	Grgmth
50	Bremen	,,	90	St. Nazaire	Newhvn
67	Amsterdam	,,	109	Caen	,,
6	Antwerp	,,	38	Guernsey	Sthamptn
59	New York	London	6	Bordeaux	Manchestr
16	Treport	,,	69	Antwerp	,,
15	Amsterdam	,,	435	Ghent	Leith
2	Antwerp	,,	89	Amsterdam	,,
49	Ghent	,,	16	Hamburo	,,
55	Antwerp	Goole	385	Antwerp	Bristol
93	Hambro	,,	33	Boulogne	,,
51	Delfzyl	,,	125	Rotterdam	,,
41	Amsterdam	,,			

Totals from Each Country:

BELGIUM ...	1168 bales	NORWAY ...	41 bales
CHANNEL Isles	38 ,,	PRUSSIA ...	57 ,,
DENMARK ...	207 ,,	SPAIN ...	147 ,,
FRANCE ...	1118 ,,	TURKEY ..	433 ,,
GERMANY ...	361 ,,	U.S.A.	95 ,,
HOLLAND ...	586 ,,		

FRENCH.

Ex-ship London; Liverpool, Hull, 7/6 extra: Manchester, Bristol, Leith, 10/0 extra.

French Linens, I	21 0	Black Cotton	2 0
II 15/6; III ...	9 6	Blue Linen	7 6
White Cottons, I	15 6	New Light Prints ...	16 0
II 12/0; III ...	8 9	New White Cuttings	20 0
Coloured Cotton	3 6	,, Stay	15 0

BELGIAN.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6; Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens, No. 1	21/0	House Cloths... ...	2/9
,, ,, No. 2	16/0	Old Bagging (solid)...	3/0
,, ,, No. 3	12/0	,, ,, (common)	2/6
Fines (Mixed)	12/0	NEW.	
Grey Linens (strong)	9/6	White & Cream Linens	35/0
,, (extra)	14/0	White Cuttings ...	22/0
Blue Linens	8/0	Unbleached Cuttings	21/0
White Cottons No. 1...	18/0	Print Cuttings... ...	8/0
,, No. 2...	15/0	FLAX AND HEMP WASTE.	
Outshots No. 3... ...	10/0	Flax, washed and dried	10/0
Seconds No. 4	8/0	Fair	8/0
Prints (Light)... ...	8/6	Flax Card Waste ...	6/0
Fustians (Light) ...	4/0	Hemp Waste, No. 1...	8/0
Fustians (Dark) ...	3/0	,, ,, No. 2 ..	3/0
Black Cottons	3/0		
Hemp Strings (unt'r'd)	2/3		

DUTCH.

F.o.r. Hull or Goole: 2/6 per ton extra London and Leith; 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 ...	14/0	Mixed Hemp Rope Coils...	8/0
,, No. 2...	9/9	Broken (in bags) ...	6/0
,, No. 3...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,, ...	4/9
Clean House Cloth ...	3/0	Canvas No. 1	14/3
Mixed Fustians ...	3/0	,, No. 2	9/9
Coloured Prints ...	2 7½	,, No. 3	6/3
Dark Prints	2 1½	W. Untarred Rope ...	9/3
Blue Cottons	5/0	Paper Shavings ...	5/0
Light Lilac Cottons	7/0	Free from wood ...	7/0

GERMAN.

HAMBURG: *F.o.b.*

NWC	19/0	LFX Second ditto ...	7/0
SPFFF	18/0	CSPFFF	14/0
SPFFF and SPFF ...	17/0	CSPFF	10/0
SPFF	14/0	CFB	6/0
SPF	11/0	Dark Blues (selected)	11/0
CCC	5/0	Wool Tares	8/0
CFX	4/0	Jute, No. I., 6/0: No. II.	5/0
White Rope	6/0		
FF Grey Linens ...	8/0		

STETTIN: *C.i.f. Hull, Leith, Tyne and London.*

SPFFF and SPFF	17/0	LFB (blue)	4/0
SPF	11/0	CSPFFF	10/0
FF	8/0	CSPFF	16/0
FG	8/6	CFB (blue)	6/0
FFX	7/0	CFX (coloured) ...	4/0

PRUSSIAN.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (cotton)	4/6
SPF	12/6	Jute I	3/0
FG	10/0	,, II	2/0
LFB	8/0	Rope I	8/0
FF	5/6	,, II	6/0

NORWEGIAN.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred)	8 3-9 0	2nd Canvas	7/0
2nd ,, ,, ...	5 6-6/0	Jute Bagging	
Manilla Rope (white)	7 9-8 9	Gunny	3 6-5-0
Best Canvas ...	11 9-12/0	Mixed	2 6-2 9

TURKISH.

F.o.b. Constantinople, Smyrna, and Salonica.

1st White Cottons* ...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons	1 3	,, Small	4/6
Coloured ,, ...	1 3		

*3/0 at Smyrna and Salonica.

JUTE.—Prices:

Good White	£15 0 0	—16 10 0	
Good	13 0 0	—14 10 0	
Medium	10 0 0	—12 10 0	
Common	7 0 0	— 9 0 0	
Rejections	6 10 0	— 8 10 0	
Cuttings	3 0 0	— 4 0 0	

FLOCKS.—Cotton Flocks, fine quality, £2 10s. per ton at works.

COLOURS.—More enquiry. Quotations are nominally as follows:

Mineral Black	Per Cwt.	£0 3	0
,, (Superior)...	,,	0 4	6
Ivory Black (Pure)	,,	0 12	0
Ochre	,,	0 2	3
French (J. C. Ochre)	Per Ton	3 0	0
Chrome (Pure)	Per Cwt.	2 0	0
Red Oxide	,,	0 4	6
Umber (Devonshire)	,,	2 10	0
,, (Turkish)	,,	2 0	0
Lamp Black...	,,	0 5	0
Ultramarine (Pure)	,,	1 15	0
Cochineal	Per lb.	0 1	3
PASTE COLOURS, with 60% of Colour: (less 2½% d'd.)			
Orange Pulp...	Per Cwt.	2 0	0
Golden Yellow Pulp	,,	1 10	0
Lemon Yellow Pulp	,,	1 10	0
Prussian Yellow	,,	1 16	0
Green (free from Arsenic) ...	,,	1 16	0
Paste Blue, 20%	,,	0 18	0
,, 33%	,,	1 6	0
,, 45%	,,	2 5	0
Imperial Yellow (dry)	,,	0 16	0

SIZING.—Glues firm, and in good demand. Raw material keeps advancing in price, supplies being insufficient and stocks nil.

English Gelatine	Per cwt.	£4 10	0—6 0 0
Foreign ,, ...	,,	3 10	0—5 0 0
Fine Scotch Glues	,,	2 5	0—3 0 0
Best Long Scotch Glues ...	,,	2 0	0—3 0 0
Common Black	,,	1 5	0—1 8 0
"Town" Glues	,,	1 18	0—2 5 0
"Bone" Glues	,,	1 6	0—1 10 0
Foreign Glues	,,	1 8	0—1 15 0
Bone Size	,,		5 6— 10 0
Gelatine Size	,,		6 6— 10 0
Dry B.A. Pieces	,,	2 10	0—2 15 0
,, English Pieces	,,	1 15	0—2 5 0
Wet ,, ,, ...	,,		8 6— 9 0
,, Sheep Pieces	,,		3 0— 4 0
Buffalo Hide Shavings ...	,,	1 12	0—2 0 0
,, Picker Waste ...	,,	1 12	0—1 15 0

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
5/0	5/3	5/6	5/9	6/3	6/9	7/0	7/6	8/0	8/9	9/6

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STARCH.—Market firm, and there seems to be every prospect of a rise so far as Rice Starch is concerned.

F.o.r. London, less 2½%:

Maize—	Crisp	£9	10	0
	Pearl	8	5	0
	Powder	8	0	0
	Special	14	0	0
Farina—	Prime	12	0	0
	B.K.M.F.	14	0	0

Delivered, less 2½%:

Rice—	Special (in chests)	19	0	0
	Crystal (in bags)	18	10	0
	Granulated (in bags)	17	10	0
Dextrine		16	0	0

MINERALS.—The best qualities of CHINA CLAY are in good demand, at unchanged prices. SATINITE and SNOWDRIFT are in steady request and a moderate business is passing in MINERAL WHITE.

Mineral White (also known as Terra Alba, Gypsum, and Sulphate of Lime), per ton f.o.r. or boat at makers' works, less 2½%:—

Superfine	£1	8	0	del. Lancs.	£1	18	0
Pottery Superior	1	4	0	,,	1	14	0
Ball Seconds	1	0	0	,,	1	10	0
Seconds	0	15	0	,,	1	5	0
Thirds	0	11	0	,,	1	1	0

(Manchester, 2s. per ton less.)

China Clay, in bulk, f.o.b. Cornwall, 9s. to £1 3s. 6d., bags 4s.; and casks 9s. 6d. per ton extra; delivered Lancashire, £1 18s. 0d. to £2 1s. 6d. (for best papers); f.o.r. London, in casks, £2 5s. 0d. per ton; f.o.b. Liverpool, in 5 cwt. casks, £2 2s. 0d. to £2 10s. 0d.

French Chalk, W.E., W.I.N.S.E.B., W.O., and other brands, £2 19s. 0d., £3 4s. 0d., £3 13s. 6d., and £3 17s. 6d. per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15s. 0d. to £5 2s. 6d. per ton of 10 bags.

Superfine Hardening, f.o.r. works, £2 0s. 0d. to £2 2s. 0d.

Patent Hardening (2 ton lots), f.o.r. Lancs, £3 5s. 0d.

Snowdrift (Paper Toughener), in ton lots, 12s. 0d. per cwt.

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16s. 6d.; calcined, £10 7s. 6d.

Magnesite (in lump), £1 19s. 6d. per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 0s. 0d. to £4 10s. 0d. per ton c.i.f. London, Manchester, and Glasgow.

Asbestos, brown grades, £14 0s. 0d. to £14 12s. 6d.

Sulphate of Barytes, No. 1, £3 4s. 0d.; No. 2, £2 12s. 0d.; No. 3, £2 2s. 0d.; No. 4, £1 17s. 6d. per ton, according to quality.

Bauxite, minimum alumina, 60%, 16s. 3d. f.o.b.

Pyrites (non-cupreous), f.o.b. shipping ports, 4½d. per unit.

Satinite, £3 0s. 0d. to £3 6s. 6d., in casks, f.o.b. Liverpool or Manchester.

Whiting, f.o.b., 10s. 6d. to 12s. 3d. per ton.

Sulphate of Alumina, £4 2s. 6d. to £4 15s. 0d. per ton del.

Hydrate of Alumina, £12 10s. 0d.

LIME.—The present price is 10/6 per ton f.o.r. works.

METALS.—LONDON: COPPER steady; TIN rather more active; LEAD firm. Tuesday's official closing prices:—

Copper—							
G.M.B., cash	£51	5	0	—51	10	0
,, three months	51	6	3	—51	11	3
Tough	54	5	0	—55	0	0
Best selected	54	15	0	—55	15	0
Strong Sheet	61	10	0			
Tin—						
Fine foreign, cash	67	1	3	—67	11	3
,, three months	67	13	9	—68	3	9
Lead—						
Spanish				13	17	6
English	14	0	0	—14	2	6

BALING TWINE.—Prices:

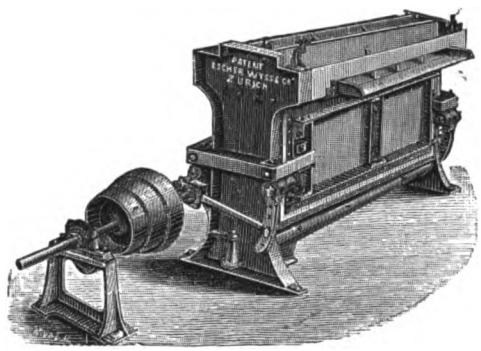
	Thick.	Medium.	Fine.
Hemp	4d. per lb.	4½d. per lb.	5d. per lb.
Mixed	3½d. ,,	4¼d. ,,	4½d. ,,

THE WORLD'S PAPER TRADE REVIEW, the leading European exponent of the paper trade.—*American Paper Trade and Wood Pulp News*

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

OVER 100 AT WORK.

FACTS SPEAK FOR THEMSELVES—

The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES—

SUPERIOR to any other System for its Numerous Advantages as:

Large Production with any kind of Pulp.
No Stoppage for Cleaning.
Most Regular and Quite Noiseless Working
Little room taken up on the Machine, &c.

AGENT—

ALPH. STEIGER C.E.

16, MINCING LANE, LONDON, E.C.

Directory of German Papermakers

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The States of the German Empire, Provinces, Towns and Firms are alphabetically arranged, and the specialties of firms classified

(In the German Language).

PRICE NINE SHILLINGS, NET.

To be obtained of

W. JOHN STONHILL, 58, Shoe Lane, LONDON, E.C.

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
AUSTRIA	131	—	—
BELGIUM	1216	1	—
DENMARK	2	—	—
FRANCE	586	2	—
GERMANY	2006	85	—
HOLLAND	34432	36	—
ITALY	71	—	—
NORWAY	5271	—	590
SWEDEN	3501	—	—
U.S.A.	1594	—	112

Including the Following:—

Quantity	From	Importer	Port
50 bales	Christiansand	J. M. Daal	London
24 ,,	,,	E. Lloyd	,,
35 ,,	,,	J. Spicer & Son	,,
102 ,,	,,	W. Guppy	,,
19 ,,	,,	Becker & Wagner	,,
24 ,,	,,	Crabb & Co	,,
17 ,,	Christiania	B. Beer	,,
7 ,,	,,	Bott & Co	,,
8 ,,	,,	Evans & Adlard	,,
47 ,,	,,	J. Eberstein	,,
204 ,,	,,	Alsing & Co	,,
202 ,,	,,	Olive & Partington	,,
10 ,,	,,	P. Sabel & Co	,,
27 ,,	,,	Crabb & Co	,,
17 ,,	,,	F. E. Foulger	,,
667 ,,	,,	Davies & Royle	,,
20 ,,	,,	W. Guppy	,,
193 ,,	Drammen	Alsing & Co	,,
26 ,,	,,	Cookson McDonald & Co	,,
363 ,,	,,	Crabb & Co	,,
149 ,,	,,	L. Henle	,,
69 ,,	,,	Webb & Co	,,
33 ,,	,,	J. Hamilton	,,
44 ,,	,,	C. Davidson & Co	,,
42 ,,	,,	F. Claydon & Co	,,
4 ,,	,,	Cowan & Sons	,,
7 ,,	,,	F. E. Foulger	,,
70 ,,	Danzig	Becker & Wagner	,,
33 ,,	,,	J. Lindsay	,,
27 ,,	,,	J. Spicer & Sons	,,
12 ,,	,,	W. Edwards	,,
8 ,,	,,	Tough & Henderson	,,
71 ,,	Fredrikstadt	Olive & Partington	,,
8 ,,	Gothenburg	Becker & Wagner	,,
95 ,,	,,	J. Spicer & Co	,,
3 ,,	,,	Davies & Co	,,
203 ,,	,,	G. Schenkenwald	,,
191 ,,	,,	G. T. Green & Co	,,
30 ,,	,,	J. Eberstein	,,
8 ,,	,,	Davies, Royle & Co	,,
1 ,,	,,	W. Ibbetson	,,
34 ,,	,,	Alsing & Co	,,
11 ,,	,,	Crabb & Co	,,
162 ,,	,,	Brown, Brough & Co	,,
12 ,,	,,	Cookson & Co	,,
28 ,,	,,	W. D. Edwards & Co	,,
40 ,,	,,	R. L. Lundgren	,,
41 ,,	Skien	J. Hamilton	,,
21 ,,	,,	J. Spicer & Son	,,
32 ,,	,,	Brown, Brough & Co	,,
43 ,,	,,	J. Spicer & Sons	,,
80 ,,	,,	,, ,,	,,
33 ,,	Venice	O. Scholzig	,,
21 ,,	,,	Hernu, Peron & Co	,,

NEW PATENTS.

APPLICATIONS.

10,656. Improvements in bearings for sieves and strainers of papermaking machines. W. Heller.

10,823. Improvements in the production of zinc and chlorine. W. A. Harper and J. L. F. Vogel.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

1897.

12,208. Manufacture or treatment of paper. Hall.

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	222	390	910
ARGENTINE	—	30	3
AFRICA	42	32	117
B. GUIANA	—	2	—
BELGIUM	156	27	12
CAPE COLONY	154	97	139
CANADA	—	11	3
CHINA	2	14	394
CHANNEL ISLES ...	—	—	54
DENMARK	—	6	20
EGYPT	—	—	29
FRANCE	374	174	345
GIBRALTAR	—	12	10
HOLLAND	22	—	22
INDIA	1646	463	56
JAPAN	—	10	—
MALTA	—	34	11
MAURITIUS	18	8	12
NORWAY	—	—	10
NEW ZEALAND	165	96	278
PORTUGAL	—	44	—
PORT SAID	—	—	2
RUSSIA	—	—	10
SWEDEN	44	17	59
SPAIN	13	15	-
S. SETTLEMENTS ...	7	14	—
U.S.A.	18	18	141
W. INDIES	—	30	9

FROM GLASGOW.

BRAZIL	—	1	—
CANADA	—	49	23
FRANCE	9	—	—
INDIA	—	112	—
NEWFOUNDLAND ...	—	7	—
NEW ZEALAND	24	—	—

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

128	r	Boston	Liverpool	1111	b	Rotterdam	Manchstr
184	b	,,	,,	762	,,	Cologne	London
480	,,	Rotterdam	,,	939	,,	Rotterdam	,,
675	,,	New York	Manchstr	1492	,,	,,	Fleetwood

WOOD PULP BOARDS.

1357	b	Boston	London	179	c	New York	Bristol
20	c	Christiania	Hull	49	b	Gothenburg	Manchstr
200	b	Helsingfors	,,	300	,,	Hambro	,,
10	c	Christiania	Grngmth	22	,,	Gothenburg	,,
20	b	Boston	Bristol	54	,,	Hambro	Goole

MILLBOARDS.

73	b	Malmo	Grimsby	5107	b	Harlingen	Hull
4127	,,	Delfyzl	Goole	5601	,,	,,	,,

PASTEBOARDS.

50	b	Amsterdam	London	13	b	Hambro	London
1200	,,	Trieste	,,	406	cr	New York	Liverpool
2488	,,	Harlingen	,,	15	b	Hambro	Goole

b—bales. c—cases. r—rolls. cr—crates.

THE PAPER TRADE REVIEW is a widely informed and well-managed enterprise, of great value to exporters for its exact Market Reports and statistics of Raw Material.—*Centr'd-Blatt fur die Papier-Fabrikation*, Dresden.

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A. WERTHEIM & Co.,

HAMBURG,

SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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AMERICAN IMPORTS OF Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
12 cases	Antwerp	Kupfer Bros	New York
21 ,,	,,	Vandergrift and Co	,,
15 ,,	,,	W. Seyd	,,
19 ,,	,,	Dingelstedt and Co	,,
15 ,,	,,	P. Ruttmann	,,
12 ,,	,,	Stiner and Co	,,
19 ,,	Glasgow	Wilson and Sons	Boston
1 ,,	Hamburg	Neuss, Hesslein & Co	N. York
22 ,,	,,	A. Kraut	,,
40 bales	,,	Amsinck and Co	,,
51 cases	,,	,,	,,
4 ,,	,,	Dingelstedt and Co	,,
33 ,,	,,	Emmerich and Co	,,
12 ,,	,,	Kauth, Nachod & Co	,,
44 ,,	,,	Amsinck and Co	,,
4 ,,	Hull	Ward and Co	,,
52 ,,	Havre	Druckleib and Co	,,
2 ,,	,,	Hoe and Co	,,
1 ,,	,,	Cluckman and Co	,,
3 ,,	Liverpoo	E. J. Riley	,,
5 ,,	,,	Spaulding Ptg. Co	Boston
6 ,,	,,	Dennison Mfg. Co	,,
10 bales	,,		,,
29 cases	,,		,,
6 bales	,,		,,
4 ,,	,,	Wadsworth, Howland	,,
44 ,,	,,	Brown Bros	Philadelphia

CHEMICAL FIBRE.

25 tons	Stettin	F. Bertuch and Co	New York

MANILLAS.

292 coils	Avonmouth	Dutton and Co	Boston
115 bales	Antwerp	Castle and Gotheil	New York
34 ,,	,,	J. Pirnie	,,
12 ,,	Dundee	Libmann and Co	,,
23 ,,	,,	Hempstead and Co	,,
33 ,,	Glasgow	Libmann and Co	,,
135 ,,	Hamburg	Salomon and Co	,,
44 ,,	,,	,,	Boston
100 ,,	Hull	Train, Smith and Co	,,
68 ,,	,,	Butterworth and Co	,,
174 coils	,,	Dutton and Co	,,
50 bales	,,	,,	,,
295 coils	Liverpool	,,	,,
99 bales	,,	Train, Smith and Co	,,
216 ,,	,,	Butterworth & Co	,,
105 ,,	,,	Train, Smith & Co	,,
166 coils	,,	Dutton & Co	,,
113 bales	,,	Butterworth and Co	,,
370 coils	London	Ludlow Mfg. Co	,,
21 bales	,,	Dutton and Co	,,
488 coils	,,	,,	,,

RAGS.

46 bales	Antwerp	Castle and Gotheil	New York
523 ,,	,,	J. Pirnie	,,
149 ,,	Bordeaux	Train, Smith & Co	,,
141 ,,	Glasgow	,,	Boston
83 ,,	,,	W. F. Corne	,,
227 ,,	Hamburg	Salomon and Co	New York
56 ,,	,,	Jessup and Moore	,,
56 ,,	,,	Salomon and Co	,,
53 ,,	,,	,,	,,
212 ,,	,,	Train, Smith & Co	Boston
123 ,,	,,	Castle and Gotheil	,,
45 ,,	Hull	Train, Smith & Co	,,
12 ,,	Liverpool	Darmstadt and Scott	N. York
187 ,,	,,	Train, Smith & Co	,,
18 ,,	,,	Butterworth and Co	,,
11 ,,	,,	,,	,,
57 ,,	London	Train, Smith & Co	,,
29 ,,	,,	Wheelwright Paper Co	,,
117 ,,	,,	H. Dutton and Co	,,
11 ,,	,,	Butterworth and Co	,,
105 ,,	,,	Jessup & Moore	Philadelphia
15 ,,	,,	To order	,,
23 ,,	Marseilles	Atterbury Bros.	New York
235 ,,	Stettin	Salomon and Co	,,
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Waterproof Paper.

A patent has been issued for improvements in waterproof paper. The invention relates to the manufacture of water and grease proof paper in a simple and effective manner, and without the employment of ingredients which are in any way objectionable with reference to the use of the paper.

In practising this invention sulphite cellulose is ground or reduced with water in a rag-engine or pulping machine having dull knives until the cellulose is reduced to a transparent or a translucent gelatinous condition, usually from ten to fifteen hours. This mechanical treatment changes the sulphite cellulose to a substance which closely resembles hydrocellulose in its properties. This modified sulphite-cellulose pulp is manufactured into paper in any common and well-known way. This paper is drawn through or immersed in or otherwise coated with a solution of pyroxylin in any suitable solvent—for instance, in acetic ether, a mixture of ether and alcohol, methyl alcohol, or acetone and alcohol. The solvent of the pyroxylin loosens or softens the surface portions of this kind of paper sufficiently to cause a close and permanent union of the pyroxyin with the paper after the evaporation of the solvent, which union is not destroyed by hot or cold water, weak acids, etc. The evaporated solvent can be recovered by condensation and be again used.

The pyroxylin enters the loosened or softened surface portion of the paper and unites with it so intimately that it becomes permanently united with the paper. The paper prepared in this manner effectually resists the action of warm as well as cold water, grease, oil, and weak acids, and is not easily permeated by air. The paper contains no ingredients which are in any way objectionable in any use to which the paper can be put—for instance, in photography, for packing butter, margarine, grease, substances containing acids, munitions of war, etc.

Paper Trade of Russia.

According to a French official report there are only two firms in St. Petersburg importing French papers, viz., the Magasin Anglais and M. Datroit, both on the Perspective Newsky. A considerable quantity of high-class paper is used here; it is obtained chiefly from Germany, England, and Austria. About October and November the manufacturers send travellers to Russia. In the opinion of specialists it will be a difficult matter to develop the French paper trade, French paper being expensive, whilst the packing is such as to materially increase the customs' duties. Warsaw is one of the chief centres of the paper trade for the whole of Russia. The paper industry is highly developed in Poland, hence but little is imported from abroad, the foreign trade, such as it is, being in the hands of the Germans, who, as yet, have found in this an undisputed market. Drawing, tracing, and photographic papers would easily find buyers at Moscow, which is the centre of supply for all central Russian towns. According to the statistics issued by the Riga Chamber of Commerce, the imports of paper are but insignificant, whereas a considerable movement takes place in materials for the manufacture of paper. In fact, numerous paper mills have been opened, and these are protected by a customs' duty which ranges from 336 fcs. 49 to 232 fcs. per 100 kilos; they are all large establishments, and are situated in the Governments of St. Petersburg, Moscow, Warsaw, Witebsk, Charkow, Wilna, Grodno, Muisk, Kiev, etc. At Riga, special mention must be made of the paper produced by the Ligat factory, and of the paper mills belonging to Eduard Bruns and Co. (Riga), G. Knopp (Biensnhof, near Riga), and Kouter (Wangasch, Livonia). These factories make various kinds of note-paper for typographical, lithographical, binding and confectionery purposes, ornamented with gilding, silver or bronze work, prints, lacing, transfer designs, etc. In Finland the paper industry is developed to such an extent that very little is purchased abroad. The chief towns worth visiting in the Grand Duchy are Helsingfors, Abo and Wiborg. The chief firms at Helsingfors likely to purchase drawing and tracing papers are those of Herman Lindell and Ostra Henriks.

Photographic Paper.

Great care has to be taken in the manufacture of photographic paper. There must be no impurities, and particularly no trace of iron, as the smallest spot would cause a stain in the photograph.

The paper must be colourless, and the whole sheet of equal grain, thickness, density, transparency, and sizing. Moreover, it must be of great toughness. These requirements limit the erection of such paper mills to places where exceptionally pure water and air are available.

The machinery must be so devised that the pulp does not touch any iron. A study of details and a strict accuracy in all manipulations must be exercised not only by the manager but also by every workman.

Malmedy in Germany and Rives in France are places where exceptionally favourable circumstances exist, not only as regards natural but also technical conditions.

After a careful examination and testing of the raw paper it is then subjected to the coating processes, of which there are many now in use. Even after the coating the paper is still liable to injury from unforeseen circumstances.

As such paper commands a very high price, many mills have from time to time tried to produce photographic papers, but most of them found that it became impossible to fulfil all the conditions necessary for the production of an entirely faultless photographic paper.

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Abridged Patent Specifications.

27,776 (97).—**Improvements in Machines for Cutting or Slitting Sheets of Paper, Cardboard, and Similar Material into Strips.**—ARTHUR BENJAMIN COWLES. Accepted 29th January, 1898.

A machine for slitting sheets of paper, cardboard, and similar materials into strips of uniform width, comprising rotary cutters normally out of action, a feed for feeding the sheets to the cutters, a support for normally holding the feed out of its operative position, and means for bringing the cutters into action and forcing the support out of its operative position at substantially the same time.

3,318 (97).—**Improvements in Machines for Cutting and Grooving or Indenting Pasteboard to be used for the Manufacture of Boxes.**—CARL ERNST PREUSSE. Accepted 8th February, 1898.

This invention forms an improvement on the machine of Patent No. 4,903 (96), and consists in arranging the mechanism for effecting the cutting in front of the mechanism for effecting the jogging or jumping, and in providing the machine with a device for displacing the pasteboard piece from the cutting mechanism to the jogging or jumping mechanism after it has been acted on by the first-mentioned mechanism.

3,777 (97).—**Improvements in Label Making and Printing Machines.**—FRED WAITE and WAITE AND SAVILLE, LTD. Accepted 12th February, 1898.

Improvements in machines for making and printing that class of label commonly known as "American washer tags," that is to say, luggage and similar labels with washers cemented round the eye or perforation by which they are intended to be attached, is the subject of this invention. The labels are preferably made from a roll or web of paper, which may be mounted on adjustable cones fixed upon a spindle at the feed end of the machine and capable of longitudinal adjustment. The web of paper is drawn through the machine by an intermittently operated feed roller, the movement of which is adjustable to enable labels of different widths to be made. The material from which the washers are punched or formed is also preferably drawn from a roll or web, and the washers on both sides of the label may be formed from the same web. For this purpose the washer web is drawn off the roll and passed into the machine at one side right across the label web, then round or against a suitable guide roller or rollers, back across the other side of the label web and thence to the feed roller operating it. This roller is intermittently operated to feed the washer web, and is arranged at each movement to feed sufficient web to form the washers for both sides of the label. The washer forming punches are preferably arranged vertically, one above the other, the label web on the most convenient side a suitable distance within the edge of the web. The edge of the label web passes between the bolsters of the punches; consequently the "punchings" removed by the punches may be thereby brought with more or less pressure against the opposite faces of the label web whilst it is stationary. The upper punch is preferably hollow and is fitted with an internal punch, which is operated to punch the eye through the label and washers whilst the latter are held in position by the washer punches. The lower punch is also hollow to form a bolster and to allow the punchings from the eye to fall through. The washer web is made wider than the washers formed therefrom, and is gummed or charged with adhesive material on the face next to the label web, leaving a narrow margin along each edge without gum. The rollers against which the gummed side of the web passes as the web is drawn through the machine are reduced in the middle so as not to touch the gummed part of the web. The label web with the washers attached is pushed by the feed rollers through the printing press. This press may be made with an inserted type bed, or form holder which is raised sufficiently between each impression to allow the inking rollers to be passed beneath. The type bed is made large enough to allow the form or type to be adjusted or located thereon in a suitable position to give the impression in the right place on the label. The labels may be severed from the web by a thin punch extending across the web and passing into a suitable bolster beneath, and formed to give any desired shape to the label as well as severing it from the web.

6,479 (97).—**Improvements in Cardboard Boxes and in the Manufacture Thereof.**—JOHN EDWARD THORNTON. Accepted 5th February, 1898.

The improvements forming the subject of this invention relate to that class of cardboard box which have flapells that fold over the loose end or side pieces to secure them together, and the object is to make these flapells self-fastening, so that they will retain their position when once folded over (without springing back) in a simpler, cheaper, and better manner than hitherto. It consists essentially in forming, in the cardboard of which the box is to be made, two parallel grooves, or forming slots or holes over which the metallic fastening strips will pass, or affixing such strips by one end only, so that when the flapell is bent over the metallic strip or clip is not stretched or elongated.

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C	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
Ca	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
D	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
Da	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
E	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
Ea	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
F	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
Fa	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
G	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
Ga	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
H	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
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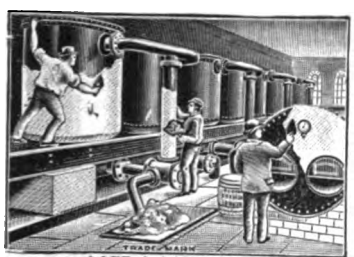

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The American Playing Card Industry.

Owing to undue competition and over-production, the prices of playing cards in the United States were for several years so low that they not only did not afford a profit, but were less than the cost of manufacture. Last July prices were raised 10 per cent., and on January 1st, 1898, there was another increase of the same amount, so that the business at last afforded profits, though not large, and any further advance, it is said, is not at all probable now.

The importation of cards of European make into the United States began to fall off in 1863, and is now very small. Most of the foreign cards received come from Germany, and, while having elegant backs, are said to be poor in the quality of the material. On the other hand, an American export trade in the finer makes began about twenty years ago, and has been growing every year. The trade began with England, extended to its colonies and to South America, and then spread pretty much all over the world. The English and German manufacturers were competed with, but there was no attempt to undersell them, the American cards winning their popularity on their merits of quality. Besides making cards with special backs for many American clubs, one firm in New York supplies distinctive packs to two clubs in England, in addition to the general trade.

The total consumption of playing cards in Great Britain is small in comparison with the amount taken in the United States, says the *Manufacturer*, and this is attributed to the fact that it is against the law in the United Kingdom to play cards or other games in most places where alcoholic beverages are sold, so that card-playing is chiefly restricted to clubs and families. The extent of the demand in America is indicated by the remark of an American manufacturer that 300 gross of packs of playing cards were shipped by his factory last June to the Klondike region. He declared that the increase in the total consumption of cards in the States kept very even pace with the increase of the popular vote, the number of packs sold last year being 13,200,000. It never exceeded this ratio except during the war, when the increase was caused by an unusual destruction of cards through various mischances of camp life. Attempts to enlarge the demand beyond the limit mentioned, by low prices or otherwise, had always proved unavailing.

The price of playing cards now range from 4s. 2d. to £2 10s. a dozen packs, the latter figure being for the elaborately finished, gilt-edged cards, which are in request for gifts at the holiday season. The greater number of cards sell for an average of about 12s. 6d. a dozen packs, or about 1s. 8d. a pack, retail.

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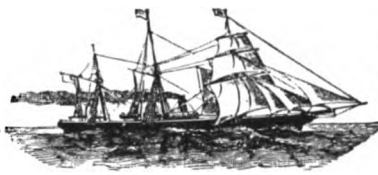
NORWEGIAN ROYAL  MAIL STEAMERS

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CHLORATES OF POTASH, SODA, AND BARYTA.

SODA ASH (All Strengths, by AMMONIA and LE BLANC Processes).

REFINED ALKALI (all strengths). CRYSTAL CARBONATE.

CAUSTIC SODA, 50% to 77%.

SODA CRYSTALS. BICARBONATE OF SODA (HIGH STRENGTH).

CAUSTIC and CARBONATE of POTASH.

SUPERPHOSPHATES, and all kinds of FERTILIZERS.

WHITE SALT in all Qualities. ROCK SALT, Lump & Ground.

STRONTIA SALTS (OXIDE, HYDRATE, CARBONATE).

MANGANATE OF SODA.

SULPHUR (ROCK, ROLL, FLOWERS.)

Sal Ammoniac.	Acetic Acid.	Glycerine.
Sulphate of Ammonia.	Acetate of Soda.	Sulphate of Copper.
Muriate of Ammonia.	Purple Ore.	Chloride of Sulphur.
Sulphate of Alumina.	Chloride of Iron.	Hyposulphite of Soda.
Silicate of Soda.	Chloride of Magnesium.	Chromic Acid.
B.S. Copper.	Ultramarine.	Liquid Caustic Soda.
Copper Precipitate.	Cyanide of Potassium.	Hypochlorite of Soda.
	Sulphide of Sodium.	

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The World's Paper Trade Review

A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 22. LONDON: JUNE 3, 1898. EVERY FRIDAY. PRICE SIXPENCE.

Rendering Paper Waterproof.

No. 1.—Ingredients:—

15 ozs. castile soap.
2 gallons of water.
½ lb. gum arabic.
1 lb. glue.
2 gallons of water.

Method of Preparation:—Dissolve the castile soap in the first quantity of water by boiling the cut-up soap. In the second quantity of water dissolve the gum arabic and glue, and then mix the two solutions. Dip the sheets of paper singly into the mixture and hang them up to dry, or else pass them between heated rollers.

No. 2.—Make a concentrated solution of gelatine and then add 2½ per cent. to 5 per cent. of glycerine. Dip the paper in this solution warm, and afterwards into a mixture of carbon bi-sulphide in which has been dissolved 1 per cent. of linseed oil and 4 per cent. of indiarubber. If only desired to be grease proof, the dipping in the gelatine and glycerine solution is sufficient.

No. 3.—A WATERPROOF PARCHMENT PAPER is prepared from paper that has been made from cotton and linen pulp, by dipping the sheets of paper from a quarter to half a second in a 5 per cent. solution of sulphuric acid, and then into a solution of water and liquid ammonia, to remove all traces of the acid; then pass the sheet of paper between rollers to press out all moisture, and afterwards dry by pressing between two rollers covered with felt and finally calendered.

No. 4.—Paper that has been dipped in a solution of glue or gelatine, and then into a 1 per cent. solution of bichromate of potash, and hung up to dry in the air, becomes perfectly waterproof, but of a faint yellow colour. Such paper would do for butcher's use, etc.

No. 5.—Dissolve 1 part (by weight) of either acetate, sulphate, or chloride of ammonia, in 6 parts (by weight) of water, and use such solution at 160 degs. F., as described in the following formula:—

No. 6.—Ingredients:—

Solution of zinc chloride, 96 degs. Tw. (47 degs. Bè.).
Liquid ammonia 9 sp. gr., 0·875.

Mix 3 parts of the zinc chloride with 2 parts of the ammonia solution, and put this solution into lead-lined vats or other vessels, and pass the paper through the solution at a speed varying from 30 to 36 yards per minute, according to the thickness, so as to permit the paper to become perfectly saturated with the fluid. Then pass the paper through a pair of squeezing rollers to remove superfluous moisture, and also harden the paper by compression; then dry the paper by suspending it in folds on a rack (such as is used in wall paper manufacture) in a temperature of 110 degs. F. (43 degs. C). Instead of zinc chloride 3 parts of crystallised zinc sulphate may be used, or also other soluble salts of zinc or of cadmium.

Instead of suspending the paper to dry, it may be immediately pressed over three steam cylinders, 7-ft. in diameter, carrying a pressure of 15 to 20 lbs. to the square inch. The cylinders should be fitted with gauges to indicate the pressure they are required to carry, and also with safety valves to prevent the pressure from being exceeded.

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Steam Production Up-to-Date.

MODERN STEAM GENERATING PLANT AND ITS MAKERS.

IV.—THE "MELDRUM" FURNACE.

Having in the last two articles of this series dealt fully with the principal types of steam boilers manufactured by two representative English and Scotch makers, we propose this week to invite our readers' attention to one of the most successful adjuncts to economical steam production which the past few years have brought forth—the "Meldrum" furnace. Some four years ago, it may be remembered, we introduced this boiler accessory to the paper and pulp-making trades in these columns, but since then it has been improved in several particulars, changes in detail having been made which materially increase its practical efficiency. Four years ago some 2,000 of the furnaces were in use, but the number now supplied amounts to more than 6,000, which is probably one of the best indications that the apparatus effectually justifies its *raison d'etre*.

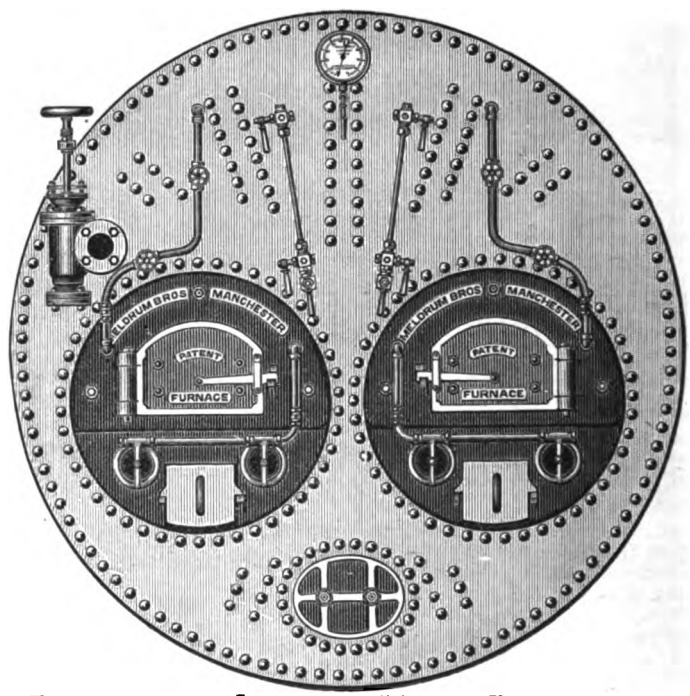

FIG. 1.—FRONT ELEVATION OF A "LANCASHIRE" BOILER FITTED WITH THE "MELDRUM" FURNACE.

The object of the "Meldrum" furnace is to provide a simple, efficient, and durable contrivance for enabling low-class fuel to be employed for steam-raising purposes, at the same time contributing in a very convenient form a forced draught. By means of this furnace such inferior fuels — inferior in quality, that is, as compared with coal, and indifferently serviceable, where not wholly useless, for firing purposes in steam boilers under ordinary conditions—such as coal dust from coal washing machines, coke dust, anthracite, smudge, pan breeze, town's ash-pit refuse and the like, can be burnt, at the same time giving the same supply of steam as if good steam coal were consumed. Its employment also supplies, where chimney power is deficient, an increased draught, increasing the evaporative power of the boiler, and contributing a mechanically-regulated and reliable action, as against a more or less irregular and uncertain effect of the ordinary chimney draught. Every apparatus which accomplishes these important operations efficiently is entitled to receive, as there is abundant evidence it now does receive, the most careful consideration at the hands of the live steam user. We need not, therefore, apologise for giving an early place in this series of articles to a descriptive account of the "Meldrum" furnace, the use of which is calculated to reduce the fuel bill in a manner, and under conditions which must necessarily be satisfactory to those who adopt it.

The general appearance and structural disposition of the "Meldrum" furnace will readily be gathered from our illustrations, which are sufficiently free from complexity to enable the reader, even if his knowledge

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of boiler construction is of the most rudimentary description, to grasp the essential features of the apparatus. Fig. 1 represents the front elevation of a "Lancashire" boiler fitted with the "Meldrum" furnace; Fig. 2 shows an interior view of the front portion of the furnace; Fig. 3 a longitudinal section of the furnace; Fig. 4 an elevation and plan of the patent interlocking fire-bars, which play an important part in promoting the efficiency of the furnace; and Fig. 5 shows a complete installation of three "Lancashire" boilers fitted with "Meldrum" furnaces. In the last mentioned illustration it will be seen that the furnaces are fitted with a silencing apparatus, in which the air is drawn by the blowers, to which we shall presently refer, through conduits leading underneath the foot-plates, effectually deadening the sound of the rush of air.

Here we may premise our description of the furnace by reminding our readers that economy in the cost of steam [illegible] To ensure an adequate [illegible] sharp draught is essential [illegible] higher temperature of the [illegible] bustion, and less velocity [illegible] and, consequently, [illegible] heat through the boiler [illegible] in practice to properly [illegible] with natural draught [illegible] supply not less than [illegible] quantity is [illegible] is chemically [illegible] When forced draught [illegible] air will suffice [illegible] This amount [illegible] cent. in [illegible] would [illegible] to be [illegible] is [illegible] with [illegible] efficiency [illegible]

[illegible]

curved form, the degree of curve being an essential feature of the design. We understand, indeed, that before the present precise curve was arrived at, over one thousand experiments and tests were made. It is found, therefore, that any deviation from the standard of curve employed decreases the efficiency.

The blowers project through the iron plate covering the ash-pit, and the steam connections to them are made through the boiler front, as shown in Fig. 1, the steam being regulated by means of a valve and cock. When the jet of steam is injected, the first result is that a column of air within the blower tube is set in motion, its momentum being sufficient to enable a considerable amount of pressure to be held up under the bars if necessary. In practice, as much as 6-in. of water has sometimes been produced, but under ordinary conditions a water column of about ½ to 1-in. is found to be sufficient. Another result is that a very large volume of air in proportion to the amount of steam used is forced through the tube. Experiments have shown, that under favourable conditions of combustion, the amount of steam used does not exceed 2 per cent., or, in extreme cases, 3 to 4 per cent. of the total evaporation of the boiler. It is found also that the steam used in injecting the air has a preservative effect upon the fire-bars. It prevents the clinker from adhering to them, and promotes a degree of porosity and looseness in the clinker which enables the air to pass through the whole body of fuel.

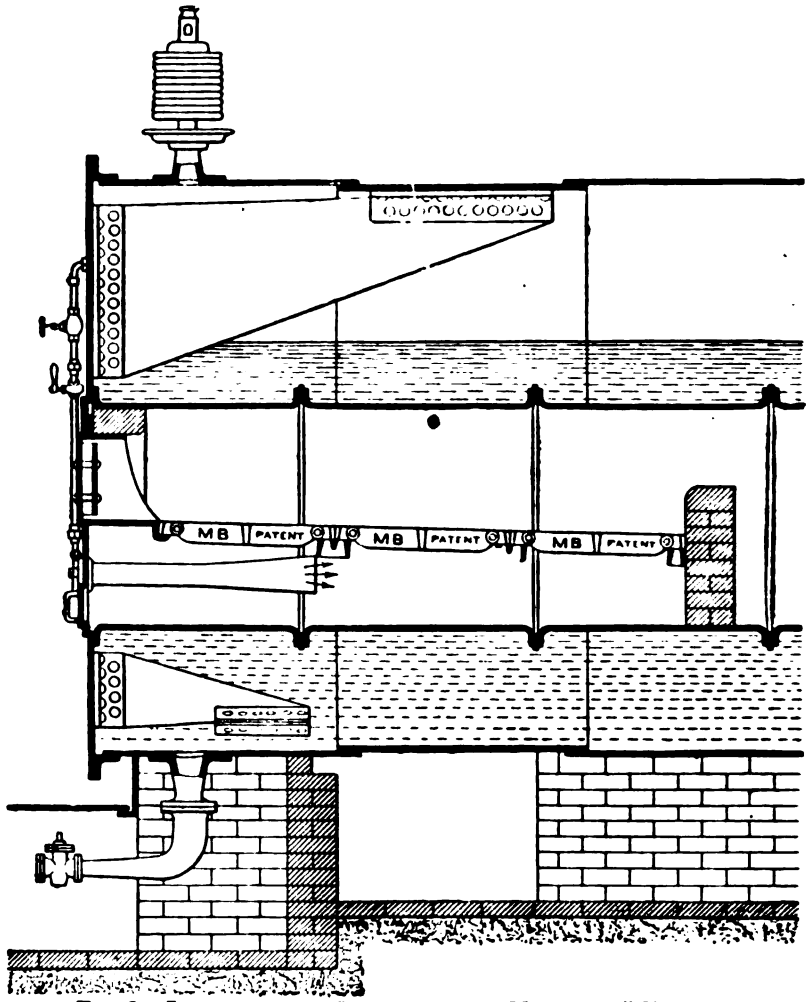

FIG. 3.—LONGITUDINAL SECTION OF A "MELDRUM" FURNACE.

The furnace bars employed in the "Meldrum" system are of special construction. They are shorter and narrower than is usually the case, and the air space between them is only $\frac{1}{16}$-in., permitting the finest ash alone to fall through, but allowing of the passage upwards of as much air as is required, and insuring its proper distribution. The bars also interlock, an arrangement

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serving to keep them level. The fact that they are light and cool renders them unusually durable, and easy for the fireman to deal with. The clinker can be removed by a slicer in pancake-like masses, without the loss of any good fuel. The dust and ashes are removed once a day by means of the small door in front of the ash-pit. As an evidence of the durability of the fire-bars, one instance, which was referred to in our columns once before, may be requoted. In this case the "Meldrum" apparatus was employed in connection with a water-tube boiler in the furnace of which anthracite coal was burnt, the combustion was often as high as 50-lbs. of coal to the square foot of grate per hour. The bars, after nine months' use, were found to be practically in as good a condition as when first supplied. In fact, the only portions of the entire arrangements (which, be it said, is entirely self-contained, and presents no projecting paraphernalia to interfere with the operations of the fireman), subject to any material degree of wear and tear, are the steam cock, and, from what one can reasonably assume, the apparatus may even outlast the life of the boiler itself, to which it is fitted without any repairs worth speaking about.

Another point in connection with the "Meldrum" furnaces which should not be overlooked is that their employment enables the eternal smoke question to be faced with increased possibilities of success than would otherwise be possible. The excessive production of smoke in generating steam arises from one of two common causes: either the air is supplied at too low a temperature in too great volume, or there is an insufficient supply altogether. The remedy is to cause a better supply of secondary air to pass over the fire when freshly charged. In the "Meldrum" furnace the secondary air supply is derived from the ashpit, as we have shown. It passes through a valve in the dead plate over the fire, and meets the gases emanating from the freshly charged fuel, commingling with the hydro-carbons evolved there-

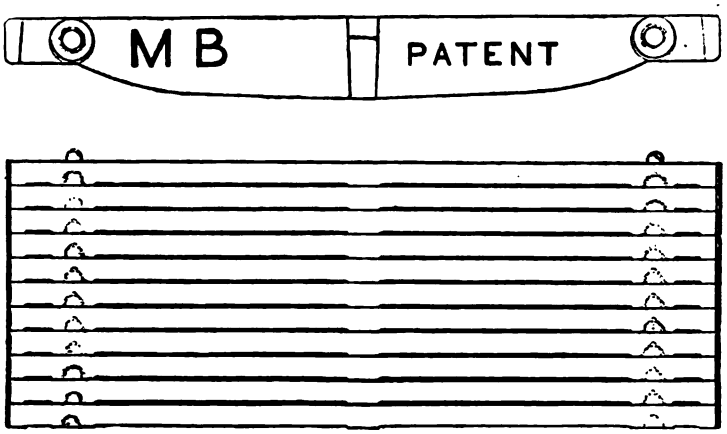

FIG. 4.—ELEVATION AND PLAN OF PATENT INTERLOCKING FIRE BARS.

Place.	Type of Furnace.	Kind of Fuel.	Cost of Fuel per ton d/d.	Water evaporated per lb. Fuel.	Cost of Fuel for evaporating 1,000 gallons.
Manchester	Ordinary	Steam Coal	10/-	8	5/6
Do.	Meldrum	Coke Dust	4/-	6½	2/9
Do.	Do.	Pan Breeze	nil.	3	nil.
Blaydon-on-Tyne ...	Ordinary	Steam Coal	10/-	8·9	5/-
Do.	Meldrum	Coke Dust	1/4	5·5	1/4
Birmingham	Ordinary	Steam Coal	5/6	7·5	3/3
Do.	Meldrum	Coke Dust	4d.	4	5d.
Leicester	Ordinary	Steam Coal	9/-	6·8	5/11
Do.	Meldrum	Slack	5/-	7	3/2

Place.	Type of Furnace.	Kind of Fuel.	Gallons evaporated per hour.	Water evaporated per lb. Fuel.	Increased fuel efficiency.	Increased evaporation.
Blaenavon	Ordinary	Small Welsh	515	8·6		
Do.	Meldrum	Do.	840	8·75	1·74%	63%
Hartlepool	Ordinary	Durham Small	126	7·87		
Do.	Meldrum	Do.	196	8·83	12%	55%
Marple	Ordinary	Burgy	621	9·75		
Do.	Meldrum	Do.	844	9·89	1·4%	35%

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from, which otherwise represent the main source of the smoke.

Ordinarily, where there is no such provision as that to which we refer, the rate of fuel combustion and the consequent duty of boilers largely depend upon the chimney draught, which more often than not varies with every eccentricity of the weather. The value of the forced draught induced by the "Meldrum" apparatus becomes at once apparent in such cases. The ashpit in such a case is put under pressure rather than the area above the fire, and the result is a gradual fall from fire to chimney. This condition, moreover, is not appreciably prejudiced during the period of stoking. In this connection a few evaporative results, the outcome of actual practice, may be given, as indicating the economy effected in representative instances. See page 5.

the limits of which cannot be exceeded either through negligence or "pure cussedness" of the most malignant description. If the boiler plates are kept clean, as they ought to be under any circumstances, and the heating surfaces so arranged that the steam can get readily away from them, there is no injury or danger to be feared. On the other hand, the results in economy, even when most inferior fuel is used, by the use of such a carefully devised system of forced draught as is represented by the one under review, are beyond dispute.

The "Meldrum" furnace, which is the patented invention of, and is manufactured by, Messrs. Meldrum Brothers, of Atlantic Works, City-road, Manchester, is now largely in use in paper mills throughout England and Scotland. In the London district alone it is employed, for example, at

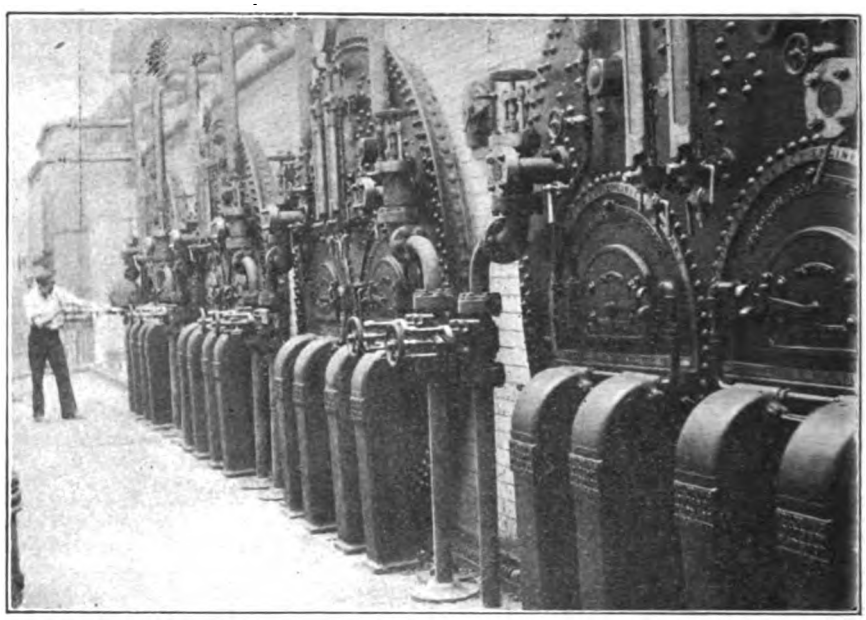

FIG. 5.—INSTALLATION OF "LANCASHIRE" BOILERS FITTED WITH "MELDRUM" FURNACES AND SILENCING APPARATUS.

It cannot be gainsaid that there is still an element of prejudice against the use of forced draught in land boilers, under many ordinary working conditions. The fact that some systems of forced draught have a tendency to force the boiler to which they are applied has been somewhat accentuated by failures which have taken place in the boilers of vessels in the Royal Navy. It should be remembered, however, that the conditions of utilising forced draught in marine boilers differ materially from those which surround the average land generator. In the latter the steam can get much more readily clear of the heating surfaces than in the former. Anyhow, in the "Meldrum" furnace all question is removed by the fact that a maximum of draught is provided for,

the London Paper Mill Co.'s mill at Dartford; the Basted Paper Mill Co.'s mill, at Sevenoaks; Messrs. Wiggins, Teape and Co.'s mill, at Dover; Mr. Joynson's mill, at St. Mary Cray; Mr. Neighbour's mill, at Henley-on-Thames; and Mr. Ford's mill, at Loudwater; whilst elsewhere the system has been installed at the mills of Messrs. Hill, Craig and Co., Balerno; R. Craig and Sons, Moffat and Airdrie; John Collins, Limited, Denny; John Plummer, Colinton, Midlothian; Gillespie and Mason, Newton-le-Willows; and other prominent papermakers throughout the world. The average papermaker is not one whit behind his brothers in keeping his eye open for means whereby he may curtail the dimensions of his coal bill, for, like other manu-

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facturers, he feels the canker of working expenses gnawing at his vitals. Steam power he must have—in most cases at least—and he must have the maximum amount of it at the minimum of cost. He knows, in short, that he cannot, in a commercial sense, "live long and prosper" unless he keeps his head clear and cool on the subject of his fuel account. It is "right there," as our American friends would say, that such an efficient apparatus as the "Meldrum" furnace comes in, and it takes unquestioned rank amongst the most successful accessories in the market with which the discriminating power-user has to reckon in dealing with the important problem of steam production up-to-date.

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Waterproof Varnish for Packing PAPERS.

No. 1.—Ingredients:—

Shellac.
Methylated spirit.
Ivory black.
Camphor.

Method of Preparation.—Put the shellac into a stone ware jar and cover with the spirit and allow the shellac to dissolve with frequent stirrings. Separately dissolve the camphor in spirit of wine, and for every quart of the shellac varnish add 1 oz. of lampblack and ½ oz. of camphor spirit (the camphor prevents the shellac becoming brittle), lay on the paper with a hard sponge or the usual method of covering paper with mucilage. If too thick, thin with spirits of wine.

No. 2.—Ingredients:—

Soap.
Green vitriol (ferrous sulphate).
Bisulphide of Carbon, or
Benzole.

Method of Preparation.—Dissolve the soap in water by boiling it, separately dissolve the ferrous sulphate in water, and then mix the two solutions. A precipitate of sebate of iron will be thrown down; collect this by filtering the mixture and wash the sebate with water off the filter paper. Allow it to settle and pour off the water; then dry the sebate, and when dry put it into a bottle and add sufficient carbon bisulphite or benzole to dissolve the ferrous sebate. The fluid thus formed is a waterproof one; the paper is either coated with it by means of a brush or sponge, or else dipped in it and hung up to dry in an airy room. The voluble vehicle evaporates, leaving the fibre of the paper impregnated with the water and effluent sebate of iron. If a solution of alum be used instead of one of sulphate of iron, a white sebate of aluminum will be precipitated, and the paper that is waterproofed with this compound is white. It should be pointed out that bisulphide of carbon is a very inflammable fluid, and not only very obnoxious in smell, but also injurious to health. Likewise, benzole is a very voluble and inflammable spirit, consequently the use of these fluids should be carried out in a place where there is no naked flame or fire.

No. 3.—Ingredients:—

4 oz. clean gutta percha.
16 oz. rectified rosin oil.
32 oz. linseed oil varnish, boiling hot.

Dissolve the gutta percha in the hot fluid. Coat the paper with the compound.

No. 4.—Ingredients:—

1 part dammar resin.
4½ parts of acetone.
5 parts of collodion.

Method of Preparation.—Dissolve the resin in the acetone by slow digestion for two weeks in a closed place, and then pour off the clear solution, and to this add 4 parts of collodion and allow the whole to clarify by standing.

No. 5.—Ingredients.—

30 parts bleached shellac.
500 ,, ether
15 ,, lead carbonate (dry powder).

Method of Preparation.—Dissolve the shellac in the ether, and to the solution thus prepared add the carbonate of lead, and well shake up the mixture.

No. 6.—Ingredients:—

1 part of glue (best).
20 parts of water.
10 per cent. solution of acetate of aluminum.

Preparation.—Dissolve the glue in the water in the usual way, and brush this over the paper, and after it has dried on, steep the paper for one hour in the aluminim acetate solution, and again dry it by suspension in warm air.

No. 7.—Ingredients:—

120 parts of linseed oil.
33 ,, quicklime.
22 ,, water.
55 ,, melted rubber.
} All parts by weight.

Preparation.—Mix the lime and water to a paste, and after having heated the oil by itself, mix it with the lime paste and then stir in this mixture (the melted rubber), keeping up the stirring all the time, whilst the whole ingredients are well incorporated. It is a secret worth knowing that any fixed oil or oil paint can be made to combine with water by the aid of quicklime.

No. 8.—Ingredients:—

1 part of gutta-percha.
40 parts of benzine.

Preparation.—Put these ingredients into a corked bottle, and heat the contents by standing the bottles in a vessel of hot water, and when the gutta-percha has dissolved, coat the paper with the fluid.

No. 9.—Ingredients:—

5 quarts of hot water.
30 ozs. of glue (gelatine or size).
3 ,, gum arabic.

Melt these solids in the water and separately melt

2 ozs. of soap, and
4 ,, of alum in
15 quarts of hot water.

Mix both liquids in one vessel, and call this compound No. 1. In another pot heat

2 quarts of benzol.
4 ,, paraffin.
24 ,, rosin, copal or mastic varnish, q.s.

Mix the benzol and paraffin fluids and melt in it the rosin, and then let it boil (over a sand or water bath) until it is of the consistency of cream. To this fluid add any one of the varnishes if desired to be of thicker consistency. Call this compound No. 2.

For waterproofing the paper with these compounds, first dip the paper in No. 1 compound heated, and then dry it; then lay on No. 2 compound by means of a brush, sponge, or any other suitable means. Be careful not to let the benzol compound become ignited.

RAGS AND PAPER STOCK were exported from Ghent last year to the extent of 15,476 tons, the quantity for the previous year being 13,570 tons.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

SCANDINAVIAN mechanical wood pulp mills find the demand rather slow just now for the British market. Quotations, however, are fairly well maintained.

SULPHITE is firm, and manufacturers, in view of being well sold ahead, show a disinclination to meet the views of buyers, who ask for reductions.

WELL-KNOWN brands of sulphite are quoted at about Kr. 140, and sulphate Kr. 125.

AMONGST the arrivals of wood pulp at London, during May, were the following:—Olano (s): 1,928 bales from Gothenburg. Benbow (s): 3,156 bales from Antwerp. Brage (s): 3,295 bales from Drammen. Swallow (s): 100 bales from Ostend. Normandie (s): 210 bales from Fredrikstadt. Roland (s): 406 bales from Hambro. Winsloe (s): 54 bales from Rotterdam. Bolder (s): 6,300 bales from Christiania. Sea Gull (s): 140 bales from Ghent. Blue Bell (s): 3,313 rolls from Antwerp. Thule (s): 592 bales from Gothenburg. Ann Webster (s): 3,058 bales from Ternuzen. Amstelstroom (s): 73 bales from Amsterdam. Berlin (s): 510 bales from Stettin. Cormorant (s): 120 bales from Hambro. Thorsten (s): 1,685 bales from Gothenburg. Nanna (s): 5,780 bales from Drammen. Batavier II. (s): 34 bales from Rotterdam. Spindrift (s): 350 bales from Ghent. Iris (s): 820 bales from Hambro. Tigre (s): 50 cases from Marseilles. Perwie (s): 596 bales from Fredrikstadt. Arcona (s): 400 bales from Fredrikstadt and 340 bales from Skein. Sea Gull (s): 384 barrels of sulphate from Ghent. Thule (s): 1,282 bales and 82 rolls from Gothenburg. Nordnaes (s): 8,354 bales from Drammen. Familiens Haab (s): 672 bales from Carlshamn. Manitoba (s): 211 rolls from New York. Sea Belle (s): 208 bags sulphate from Ghent. Ann Webster (s): 2,442 bales from Ternuzen. Balder (s): 4,096 bales from Stocka. Swallow (s): 300 bales from Ostend. Frithof (s): 200 bales from Gothenburg. Fitzclarence (s): 54 bales from Rotterdam. Thorsten (s): 750 bales from Gothenburg. Sea Gull (s): 102 barrels sulphate from Ghent. Nor (s); 572 bales from Christiania. Courier (s): 1,750 bales from Fredrikshald. Batavia I. (s): 457 bales from Rotterdam. Nautilus (s): 104 bales from Rotterdam. Kelso (s): 1,580 bales from Christiania and 1,969 bales and 128 cases from Drammen.

THE following lots were also received at London from the United States and Canada:—British Empire (s); 880 bundles from Boston. Halifax City (s): 2,693 bales from St. John. Maine (s): 17 cases from Philadelphia. Damara (s): 3,332 bales from St. John. Oriel (s): 1,868 bales from Boston.

ARRIVALS at Manchester included:—Holbein (s): 143 bales from New York. Norronna (s): 1,602 bales from Drammen, and 3,250 bales from Skein. Glendevon (s): 43,740 bales from Bangor. Wagrien (s): 627 bales from Hambro. Odd (s): 1,238 bales from Gothenburg. Fulmar (s): 52 bales from Rotterdam. Sarp (s): 4,066 bales from Sarpsborg. Rogaland (s): 1,946 bales from Gothenburg. Ibis (s): 20 bales from Antwerp. St. Andrew (s): 40 bales from Christiania, 880 bales from Drammen, and 2,810 bales from Skein.

AT Liverpool, the May imports included:—Dollerel (s): 164 bales from Rotterdam. Avocet (s): 153 bales from Rotterdam. Lestris (s): 52 bales from Rotterdam. Rallus (s): 155 bales from Rotterdam. Umbre (s): 53 bales from Rotterdam. Hugin (s): 94 bales from Gothenburg. The arrivals of American and Canadian pulp were:—Lake Superior (s): 2,445 rolls from St. John. Vancouver (s): 292 rolls from Portland. Californian (s): 264 rolls from Portland. Gallia (s): 501 bales and 1,939 rolls from St. John. Lake Ontario (s): 175 bales from St. John, and 2,800 bales from Montreal. Lake Winnipeg (s): 2,000 bales from Montreal.

The imports of wood pulp at Hull during May included:—Buffalo (s): 741 bales from New York. Juno (s): 600 bales from Dronthein. Angelo (s): 2,457 bales from Christiania and 160 bales from Christiansand. Ariosto (s): 1,409 bales from Gothenberg. Astrea (s): 212 bales from Hango and 32 bales from Helsingfors. Domino (s): 2,073 bales from Drontheim. Eldorado (s): 110 bales from Bergen. Romeo (s): 903 bales from Gothenberg. Montebello (s): 1,528 bales from Christiania and 400 bales from Christiansand. Elbe (s): 200 bales from Oporto. Urania (s): 157 bales from Abo. Angelo (s): 1,399 bales from Christiania. Juno (s): 769 bales from Drontheim. Rosario (s): 306 bales cellulose from Trieste. Bruno (s): 147 bales from Hambro. Swift (s): 25 bales from Rotterdam. Tasso (s): 1,200 bales from Drontheim. Montebello (s): 260 bales from Christiania. Romeo (s): 677 bales from Gothenburg. Corso (s): 712 bales from Hambro. Capella (s): 138 bales from Hango.

PRESTON received:—Idun (s): 6,000 bales from Christiania and 7,112 bales from Skein. Pearl (s): 4,329 bales from Ronneby. Spindrift (s): 413 bales from Ghent. Scott (s): 930 bales dry and 3,436 bales wet pulp from Skein. Riga (s): 3,958 bales from Drammen. Barregaard (s): 2,156 bales and 269½ tons from Sannesund. 581 bales from Skein, 1,506 bales from Fredrikshald, 160 bales from Drammen and 850 bales wet pulp from Arundal. St. John City (s): 2,162 bales from St. John. Gird (s): 1,510 bales from Halmstad and 1,877 bales from Gothenburg.

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WOOD PULP was received at Glasgow during May as under:—Assyrian (s): 180 bales from Halifax. Pomeranian (ss): 66 rolls from New York. City of Lisbon (ss): 250 bales from Oporto.

AT Leith the month's arrivals included:—Bele (ss): 561 bales from Gothenburg. Orient (ss). 200 bales from Konigsberg. Astrologer (ss): 11 bales from Rotterdam. Rona (ss): 240 bales from Copenhagen: Marna (ss): 300 bales from Drontheim. Weimar (ss): 1,106 bales from Hambro. Ronan (ss): 56 bales from Rotterdam. Rona (ss): 130 bales from Copenhagen. Lindesnaes (ss): 800 bales from Sannesund. Iona (ss): 630 bales from Portland.

THE imports at Grangemouth during May included the following:—Norway (ss): 1,396 bales mechanical and 1,910 chemical pulp from Christiania. Cumberland (ss): 1,000 bales from Hamburg. Afergrange (ss): 3,071 bales from Skutskar. Lydia Millington (ss): 6,206 bales from Gefle. Tronda (ss): 320 bales chemical pulp from Drontheim. Scotland (ss): 1,100 bales mechanical pulp from Christiania.

AT Granton the principal lot received last month was 1,301 bales from Gothenburg, per the ship Bele.

GERMAN capitalists are reported to be interested in a pulp mill that is to be built on an extensive scale at Erie, Pennsylvania, U.S.A. Mr. Ernest R. Behrend is said to be one of the prime movers in the undertaking.

THE uncertainty of sulphur supplies continues to worry manufacturers of sulphite works in the United States. Spain, it is stated, refuses to modify the decree declaring sulphur contraband of war.

SHIPMENTS of sulphur to Canada have been rather large of late. It appears that several American manufacturers had made arrangements for the consignment of the material across the frontier.

WE learn, however, that Señor Bonilla, the Spanish Consul-General in Montreal, has entered a protest against the export of sulphur from Canada to the United States on the ground that it is contraband of war.

THE various enterprises that have lately been started with the view of developing the Canadian wood pulp industry appear to be meeting with favourable support.

LOCAL interest is very strong in the Cushing Sulphite Fibre Co., Ltd., of St. John, N.B. We referred to this newly-formed company in our last issue, pointing out that a profit of 26 per cent. was expected on the ordinary share capital to be issued, on a daily output of 28 tons.

SCOTTISH papermakers are chiefly interested in the St. John Sulphite Pulp Co., Ltd. Messrs. Mooney, we learn, are pushing operations on the mill at Mispec, N.B. Seventy-five men and eight teams are at work. There are two large steam drills. Nearly six thousand yards of rock have been excavated. When another thousand are done the stone dam will be begun and the working force will be more than doubled. A new wharf 500-ft. long will be built to connect with the old one. A lot of spruce have been purchased, 1,250,000-ft. having been brought down stream to the mill site.

MR. DONALD FRASER, of Fredericton, N.B., has lately returned from England. One outcome of his visit may be the establishing of a pulp mill at Fredricton.

IT is probable that a pulp mill will be built at Moose River, near Parrsboro, N.S. The property, which consists of about 15,000 acres, is owned by ex-Mayor M. L. Tucker and Messrs. Huntley and Epps.

A QUESTION engaging the attention of the Quebec City Council just now is that of the extension of the Canadian Pacific, or of the Quebec and Lake St. John Railway, to the Allan Steamship Company's wharf. The extension would bring vessels to the port, for it would draw traffic there. Two pulp companies, it was shown, would ship their output by way of Quebec if the extension were made.

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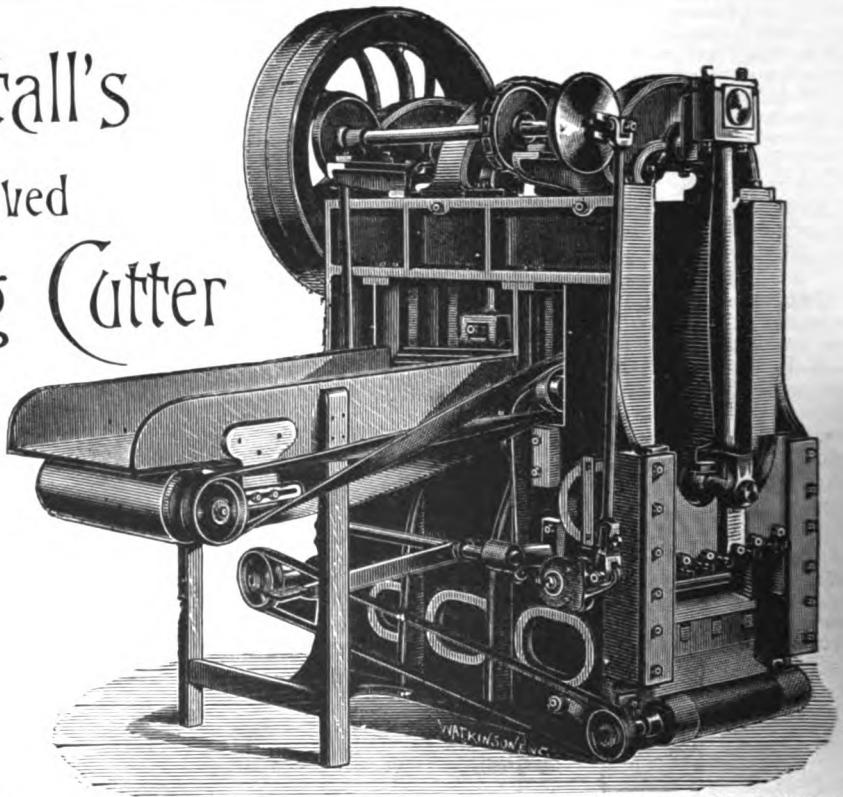

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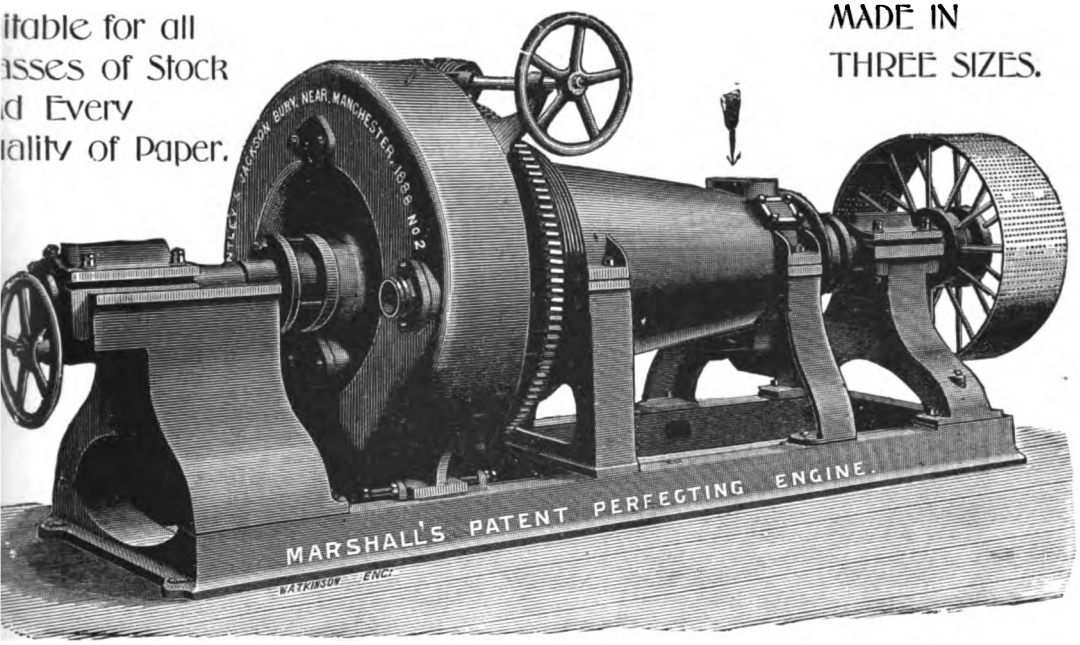

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Evolution of Digesters.*

By Martin Griffin.

It is not my purpose to weary you with all the details of construction of the sulphite digester, which have been proposed and patented since the discovery of this process for treatment of vegetable fibres by Benj. C. Tilghman, of Philadelphia, in 1867. The great mass of such are absolutely of no interest. I shall endeavour to confine the limits of this paper to the improvement and rational features of the development, without giving exact dates. From Tilghman's patent we learn that "a strong iron vessel of any convenient size and shape, lined with lead, and provided with a steam jacket and with necessary pipes," etc., may be used for this purpose. In this brief description we are introduced to the first sulphite digester. From this point we shall see that the difficulties to be encountered and the development of the digester are both of a chemical and physical nature.

Naturally attention was first directed to material which would resist the action of the sulphur gases and acids so far as it was possible to decide from experience in other industries. Next, the physical qualifications of such materials. Lead was selected to meet the first of these requirements, but on account of its great weight, its lack of hardness and tensile strength, it was totally unsuited physically for the purpose. Iron, on the other hand, fulfilled the requirements which lead lacked, but could not resist the action of the acids. Nevertheless, we find as late as 1880, that Mr. C. F. Cross took out an English patent, No. 4984, for a process of boiling jute, hemp, flax, etc., with sulphites and caustic soda in an iron vessel. The writer has no knowledge that this process was ever put to any considerable use, but ventures to say that such a vessel for cooking with an alkaline solution of sulphites would have quickly failed.

Hence we see in the first digester a combination of these two materials. We have no knowledge of the difficulties which Tilghman encountered with his digester, as he did not make a commercial success of his process. We know what his difficulties would have been had he pursued his work. The unequal expansion and contraction of these two metals, about 1 to 2½, was destined to play a very important part and to present great difficulties to the chemical engineer, and to cost manufacturers hundreds of thousands of dollars in their attempts to yoke them and make them work together.

From that time nothing more of importance relating to this process happened till about the expiration of Tilghman's patent, when almost simultaneously, during the years 1880 to 1885, the process was taken up by Carl D. Ekman and Edw. Partington in England, David Otto Francke in Sweden, Alexander Mitscherlich in Germany, Eugene Ritter and Chas. Kellner in Austria, and also by Chas. S. Wheelright and Geo. E. Marshall in the United States. From this time there has been great activity in the development of the process and industry.

In general, the process of reducing wood to fibre suitable for papermaking consists in subjecting it to a solution of sulphites of the alkaline earth bases in the digester for from ten hours to three days at a steam pressure from 1 to 5 atmospheres. The acid solution contains from 1 to 2 per cent. base, and 3 to 5 per cent. sulphur dioxide, according to circumstances. Here we see what is demanded of the digester.

Ekman's digester, as described in his English patent, July 13th, 1881, consisted of a "jacketed boiler lined with lead or a suitable compound thereof, and mounted on trunnions for convenient filling and emptying." The digester was cylindrical in shape, and mounted in either a vertical or horizontal position. You will note that the heat is transmitted to the mass to be cooked by means of a steam jacket. Also, that neither Tilghman nor Ekman made any reference to the method employed in lining their boilers with lead. The production of the fibre was their attractive object, and the digester was only a means to this end.

The same year Francke, in Sweden, patented a process for improvements in the manufacture of paper pulp. His digester consisted of a horizontal cylinder revolving upon anti-friction supporting rollers, having a steam jacket on each end connected by lead-covered tubes passing through the interior of the digester, which was lead lined.

Ekman's digester was 4-ft. in diameter and 12-ft. long, and Francke's was probably comparatively small. In 1883, Alexander Mitscherlich patented a digester and process for reducing wood to pulp radically different from anything hitherto known. The digester, cylindrical in form, was about 12-ft. in diameter and 36-ft. long, stationary, and was supported horizontally upon piers of masonry. It was built as follows:—First the iron shell, ¾-in. thick, the interior surface of which was covered with a cement of tar and pitch; next a lining of thin sheet lead with edges burned together. Upon this lead is laid flatwise a course of dense, vitrified bricks, especially made for this purpose, having tongues and grooves edgewise. Upon this is laid another course of bricks edgewise, having their tongues and grooves arranged accordingly. This brickwork was laid in Portland cement. The cooking was accomplished by indirect steam passing through coils of 1-in. pipe composed of lead and antimony, lying in loops on the sides of the lower half of the digester.

At this point let us review the probable reasons why the use of lead for lining, and later, bronze digesters, was so vigorously followed up. Lead has long been used in the manufacture of vitriol, though under very different conditions, and hence it was thought suitable for this purpose. Some believed that though the lead lining would

* A paper read by Mr. Martin Griffin before the New York section of the Society of Chemical Industry (U.S.A).

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give out in time, it could be so used, and the digester so constructed as to make the necessary repairs cheaply, and so make its use a commercial success. Still others believed that lead could be so bonded to its iron companion that it would give up its bad habits of expanding extravagantly, and then refusing to contract to its former dimensions, and lead a new life. The beautiful pulp produced, when the digester was new in fifteen to twenty hours, and often in less time, with no loss of time in blowing down the pressure, discharging and washing out, and little (if any) inspection, was a great temptation to its use, when contrasted with the slow process of moving away the discs of wood in the large Mitscherlich chambers, steaming, cooking at low temperature and pressure for nearly a week, blowing down the pressure, and finally washing and shovelling out by hand, etc.

Perhaps one of the most potent reasons —in the United States at least—for not adopting the heavy, thick brick lining and process of Mitscherlich, was because he had protected it by patents and was able to organise a strong company composed of influential men in the Government service during the administration of 1884 to 1888. This company owned the exclusive right to operate the process in the United States and Canada. The price of pulp and paper at that time, and the very low cost of producing sulphite fibre, was a sufficient reason for charging a high royalty for the use of the digester and process. This the majority of manufacturers were unwilling to pay, believing that they could circumvent these demands at less expense. Also the slow, tedious European process did not accord with the American idea of progress.

(To be continued.)

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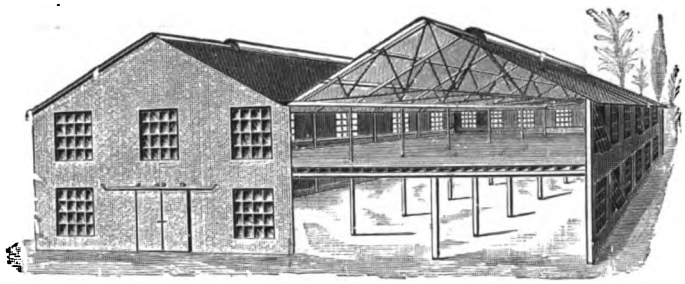

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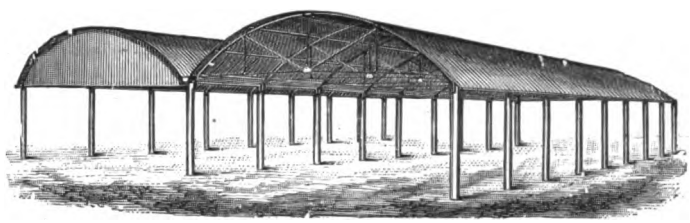

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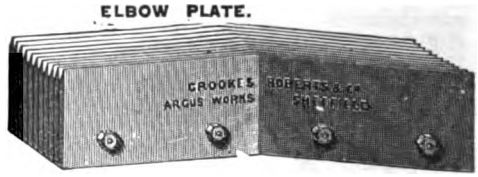

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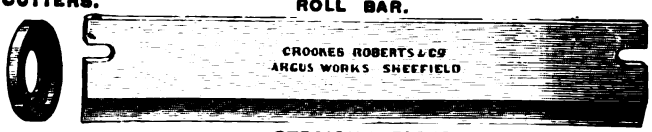

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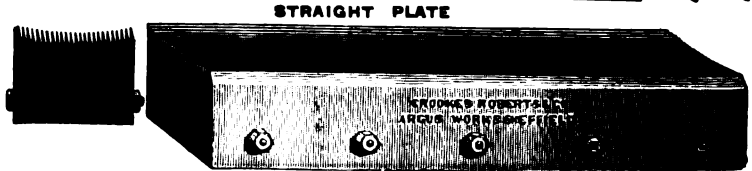

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About Leather Link Belting.

In these ultra-competitive times, when economy in working expenses becomes more than ever imperative amongst machinery users, there is a danger lest the large amount of attention very properly bestowed upon the steam engines and boilers in a mill or factory overshadows the importance of a careful consideration of the accessories in the employment of power. The manufacturer is apt, perhaps, to forget that the whole battle does not begin and end with the boiler-house and the engine-room. Granted the desirability of using every legitimate means of securing economy in these departments, and of having the most efficient type of boiler and the most improved modern type of motor, one other matter must not be ignored—the means for the economical transmission of power. Until that happy day arrives when all machinery will be a power unto itself, and belting for power transmission purposes will have been improved out of existence—a period, we doubt not, we shall have to wait for until time be ripe enough for the appearance of Macaulay's New Zealander—we shall want belting, plenty of it, and good belting too.

This leads one dangerously near the quicksands of invidious comparison, and the treading upon tender corns, but we avoid that danger by sticking to the faith that is in us after years of observation, the plausible representations of individual manufacturers notwithstanding: that there is no such thing in the world as the belting which is the *best* under all conditions of working. It is all very well for proverbial philosophy to insist that there is nothing like leather, but when it comes to leather belting, it is sheer nonsense to contend that it is the best under *all* conceivable circumstances. The same remark applies with equal force to every other kind of belting. It is all a question of degree and condition, and the conditions which prevail in the average paper mill are very trying to "best" beltings of every kind.

The average leather belting does not ordinarily come out of the ordeal of running in a paper mill to the best advantage to itself, and yet under conditions of a more normal character it would be able to give a very good account of itself. Now a leather belting which can successfully withstand the dampness and atmospheric extremes which are characteristic of a paper mill is a real *desideratum*, and rapidly commends itself to the discriminating mill owner or his engineer. Leather link belts of certain kinds have been found to answer very well, and the new type which we propose to consider in this article—the "Acme"—has a claim upon our attention in this particular, inasmuch as it is stated to be the only leather belt which is absolutely waterproof, there being no cemented joints to give way as the result of contact with such dampness as one meets with in paper mills. When one adds to this qualification its further practical merits, such as its ability to adjust itself to pulleys more readily than solid leather belts do, and the fact that its weight gives it an increased power-transmitting capacity without undue width either of belt or pulley, it will be understood that it are worthy of more than passing consideration.

As hitherto manufactured, leather link beltings, while possessing something of the advantages already mentioned, have not been beyond reproach in some cases on other grounds. Ordinarily the pieces of leather used are very short, necessitating a large number of joints to every foot of belt. Their main defect, however, has been their comparatively small contact surface as between the pulley and the belt. Less than half only of the apparent driving capacity of the belt is thus utilised—a serious drawback, which has done much to discredit link belts, and render them unpopular where at first they were well received. The "Acme" link belts are constructed upon an entirely new principle, by which the defects mentioned are completely avoided. These belts present absolute contact, both laterally and around the pulley, thus utilising 100 per cent. of the apparent transmitting power of the belt as compared with only a fractional utility found in other link belts. In practice, the proper manner of running a link belt is to draw it taut upon the under side, allowing the upper side to sag and climb the driven pulley, so as to bring the belt in contact with a large proportion of its circumference. This large arc of circumference, and the weight of the belt, result in the largest possible amount of power transmitted. In link belts as ordinarily constructed, this way of running upon the pulleys is a necessity, because they do not possess the ability of complete contact with the pulley. While it is desirable to run the "Acme" link belt in the same manner for obvious reasons, it is not an absolute necessity. By virtue of its complete contact with the pulley, it may be run by drawing upon the upper side, the under side being slack. This arises from the fact that the belt is made with a centre hinge joint, and so adjusts itself to the pulleys more completely than any other belt. This hinge is also the keystone of an arch. Its V shaped links throw the edges of the belt down, so that the belt tends to hug the pulley tighter at its edges than in the centre, even though the pulley be crowning.

In other link belts having centre hinge joints, dependence is put on the weight of the belts to bring their edges in contact with the pulleys. But opposed to this is the tendency of the belt to maintain a flat shape, and also the centrifugal principle which throws the edges outward and away from the pulley when in motion. In the "Acme" belts this same centrifugal principle and the working tension of the belt bring the centre down the pulley, making the lateral contact perfect. Cushioning also is prevented. The hinges are made with slot-shaped openings by which the air passes in the most natural way from the highest part of the pulley through the centre of the belt. The circle

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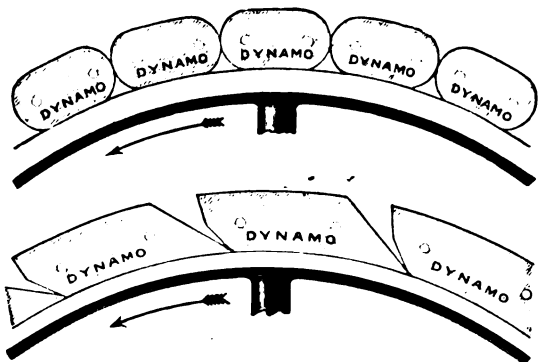
upon which the links are cut agrees with the driven or smaller pulley upon which the belt is to run. Thus a driven pulley of 12 inches in diameter will have a belt the under side of whose links are cut upon a 12-inch circle. A belt made to run upon a driven pulley 20 inches in diameter will be made from links cut to fit a circle 20 inches in diameter, and so on. It is in part by these means that absolute contact between the belt and the pulley in the direction of its circumference is secured.

THE OLD TYPE.



THE NEW TYPE.

The manner in which the toe of the link rests against the heel of the following link is worth of especial note. This construction brings the links into absolute contact with each other as the belt passes around the pulley so that no space exists between them. This form of link also enables the belt to adjust itself, within a limited range, to different sizes of pulleys. If the belt runs over a pulley a little larger, the flexibility of the link caused by the shape of the toe enables the link to somewhat straighten out, and the toe will still rest against the heel of the following link, thus closing the gap upon a little larger circle. If, on the other hand, the belt runs on a pulley a little smaller than the one to which the belt is adjusted, the flexibility of the toe causes the belt to assume a smaller circle by means of the pressure of the heel upon it. Thus, a belt made to run upon a pulley 12 inches in diameter will conform itself to pulleys ranging from 8 inches to 16 inches in diameter. A belt made upon a 20-inch circle will adjust itself to pulleys from 16 to 24 inches in diameter, and so on, whether larger or smaller than the sizes here given.

Contrasting this with an examination of a link belt as ordinarily made, and as passing over a 12-inch pulley, the difference is apparent, and the smaller degree and contact with the circumference of the pulley rendered evident. Two further differences should also be noted: first, the greater length of the links in the "Acme" link belt over other link belts, thus largely reducing the number of bolts (one third), and consequently by that amount reducing the liability of the belt's getting out of repair; and secondly, the amount of leather between the bolt hole and the end of the link, which represents just so much more stock for strength and wear. We are assured that these "Acme" belts are made from the very best leather, which is stretched lengthwise of the links before they are cut. They are made with special coupling joints, by means of which they are easily and quickly put together and taken apart. Any ordinary mechanic can put them on, "take them up" or take them off. Their utility has been thoroughly tested, and the makers of them, the Cardiff Asbestos and Belting Co., Ltd., of Cardiff, submit them as perfected link belts, and as the best and cheapest of their kind in the market. In this connection the company have issued a challenge which is worth repeating. "We challenge," they say, "any manufacturer in the United Kingdom to a public competitive trial between his link belts as heretofore and at present constructed, and our 'Acme' link belts, allowing any such competitor to run under exactly the same conditions, a belt 9 inches wide against one of our 'Acme' belts 6 inches wide, or one of his belts 12 inches wide against one of ours 8 inches wide; and we are ready to make a present of one of our 'Acme' belts, 6 or 8 inches wide, if it will not transmit as much power as the 9 or 12-inch belt as made by any other link belt manufacturer in the United Kingdom." This challenge is certainly fair enough, and it would be interesting to see it accepted and to learn the result.

These "Acme" link belts seem to be in a special measure adapted to main-driving purposes in paper mills and factories, engineering shops and industrial establishments generally, owing to the large amount of power they are capable of transmitting. Their employment effects a saving alike in the width of pulley and belt; and in shops or mills where the main-driving belt, or the main-counter belt, is overloaded by the addition of new machines, making a change necessary, a cheap and effective method of making a change would be to put one of these link belts on the old pulleys, instead of changing both belt and pulleys for wider ones, which must be done if an ordinary belt is used. Moreover, these link beltings need no especial attention. It is necessary, of course, to remember that the traction of a link belt upon the pulley depends, first, upon the amount of contact which there is between the belt and the pulley; second, upon the belt being kept as free as possible from grease; and third, upon the avoidance of a glazed surface upon the running side of the belt. If the belt becomes glazed, a little sand-papering, or the throwing of the belt from the pulley and bending it to the size of a smaller pulley will roughen the surface and remove the glaze. If these points be borne in mind, and all temptation to use oil, grease or resin be strenuously opposed, these "Acme" belts are promised to do their duty satisfactorily.

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DAYTON, OHIO. U.S.A.

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Engineers,

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☞ Refer to Article on Acetylene Gas in No. 12 (Vol. XXIX), of this Journal. ☜

WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

AN AMERICAN MACHINE FOR IRELAND.—The Rice, Barton and Fales Iron and Machine Company are now engaged in building for the Leinster Paper Company, Ireland, a 120-inch paper machine. It is fitted with 20 dryers, each having a diameter of five feet.

MR. OTTO LECHLA, of 28, Budge-row, Cannon-street, E.C., has been appointed sole agent for the United Kingdom of the Beloit Iron Works, Beloit, Wis., U.S.A. This firm are well known builders of heavy fast-running papermaking machines.

WILSON'S PATENT AUTOMATIC SELF-CLEANSING FILTER.—Messrs. Masson, Scott and Co., Ltd., of York-place, New Wandsworth, S.W., the makers of this well known filter, have been very busy of late in supplying orders received from papermakers not only in this country, but on the Continent and in North America. The many advantages in connection with the appliance are fully recognised by users, and owing to the great demand Messrs. Masson, Scott and Co., Ltd., have given the sole right to the Airdrie Iron Co., well known practical engineers, to make the filters in Scotland.

MR. ANTHONY KEOGH has commenced his duties as manager of the Gigg Mills, Bury. Mr. Keogh is an experienced papermaker, and has an excellent reputation in the trade. He was for a period of ten years with Messrs. Craig and Sons, being manager of their Caldercruix Mills, and previous to that was with Messrs. John Annandale and Son and Messrs. H. Cook and Co., Richmond. Mr. Keogh has also had a successful career in New Zealand. He went out to superintend the erection of a papermaking machine at the Woodhaugh Paper Mill at Dunedin, belonging to Messrs. Fergusson and Mitchell. He took over the management of the mill and was with Messrs. Fergusson and Mitchell for nearly two years; subsequently he took over the management of the only other mill in the colony, viz., that belonging to the Mataura Falls Paper Mill Co. at Mataura, where he fulfilled a three years' engagement. Prior to leaving New Zealand Mr. Keogh was given a banquet, and his services in connection with the paper trade in the colony were referred to in terms of the highest appreciation.

THE DECIMAL SYSTEM.—The metric system of weights and measures was discussed at the annual meeting of the new Decimal Association, held last week at the offices of the London Chamber of Commerce. Sir S. Montagu, the chairman, moved, and Lord Kelvin seconded, the adoption of the report, which stated that the Act just passed legalising metric weights and measures was a move in the right direction, but the sooner a definite period was fixed for rendering the change compulsory the better it would be for the whole country. The report was adopted, and Mr. J. E. Dowson proposed that the Government be urged to adopt the metric weights and measures in the Custom-house and Post-office and in the Departments which deal with contracts; also that as a beginning they should at once have the metric weights and measures placed side by side with those now in use in all specifications and statistics. Mr. Alexander Siemens seconded, and Mr. Rowlett, president of the Leicester Chamber of Commerce, and Sir P. Magnus supported the resolution, which was carried unanimously.

A FIRE occurred at the Ely Paper Mills, near Cardiff, on Wednesday, and raged for three hours, in a yard where was stored about 8,000 tons of wood pulp. It is estimated that £2,000 damage was done before the fire was got under, but all is covered by insurance.

S.O. CONTRACTS.—Tenders were received to-day (Friday) for the supply of paper to the Stationery Office, Dublin. It is stipulated that the paper delivered must be manufactured on the premises of the contractor.

MESSRS. FELBER, JUCKER AND CO. advise us that they have removed to 3, Royal Exchange-court, Glasgow.

MR. ADAM WILLIAM BLACK, a member of the well-known publishing firm of Messrs. A. and C. Black, died in London on Saturday at the age of sixty-two.

THE Canadian Parliament has been asked to vote 40,000 dollars for the establishment of a direct fortnightly steamship line to Manchester. Sir Wilfred Laurier recently stated in the House that negotiations were pending for the establishment of a French line of steamers to Canada.

THE E. B. EDDY CO., well known Canadian papermakers, have recently placed an order with the Black and Clawson Co., an American engineering firm, for a 112-in. papermaking machine.

WE have received from Karl Krause, of Leipzig, a copy of his new catalogue dealing with stamping presses. It consists of 88 pages, and shows 18 distinct types of machines, made in various sizes. The firm of Karl Krause have made a particular study of stamping presses, and from time to time have introduced improvements with the result that to-day a high point of perfection has been reached. Readers interested should apply for a catalogue (in German), as the contents are tastefully arranged and well illustrated. The reading matter also gives some interesting particulars relating to stamping presses, and the success of the machines supplied by Karl Krause is well indicated by the numerous testimonials received from users from all parts of the world. The firm of Karl Krause is an old-established one, and some time ago three of his workmen—Franz Hainze, Friedrich Schonherr and Adolf Rossler—received a medal of "faith and good workmanship" from His Majesty King Albert of Saxony, the men, who are fitters of Karl Krause's machines, having been in the employ of the firm for 30 years.

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JAMES MILNE & SON, LIMD

Papermakers' Engineers,

MILTON HOUSE WORKS. EDINBURGH.

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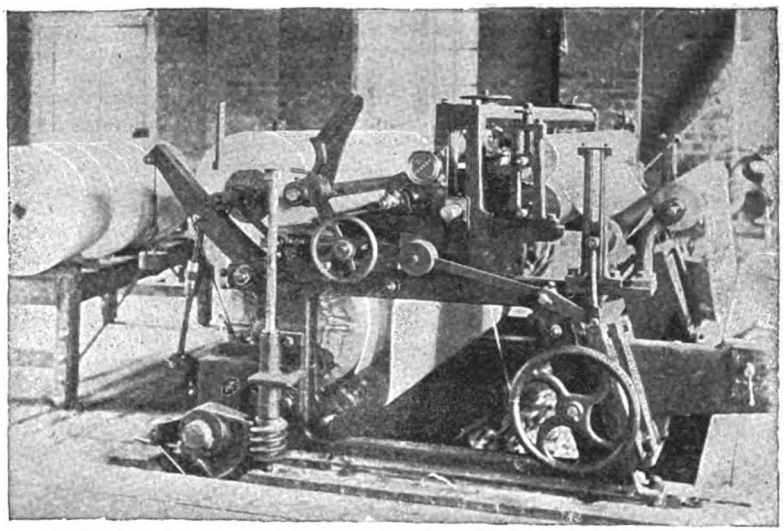

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For Webs of any Width,

Makes Clean, Perfect Reels with a Minimum of "Broke."

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NORWAY.

THE KATFOS CELLULOSE-FABRIK, LTD.—This company has been formed with a nominal capital of 700,000 kr. A cellulose mill is to be established at Katfos, near Drammen.

THE ANGLO-NORWEGIAN KIESELGUHR COMPANY, LTD.—This company has been formed with a nominal capital of £100,000, divided in 100,000 shares of £1 each. The object is to acquire in perpetuity upwards of 100 lakes and waterfalls in South Norway, which lakes are known to contain immense deposits of infusorial earth, otherwise known as Kieselguhr or Fossil Meal. There will also be transferred to the company the benefits of options to purchase on the terms therein named upwards of 250 more lakes which heve been obtained with a view to securing a practical monopoly.

RUSSIA.

MESSRS. C. AND CHR. NEBE, in St. Peters burg, have received authority to form their business into a limited company, with a share capital of 3 million rubels. The shares, however, will not be put upon the market, but will be divided among the members of the family. The works are among the largest and best conducted paper mills in Russia. Their writing and cigarette papers are well known in Russia.

GERMANY.

THE RAG TRADE.—The Upper Bavarian Chamber of Commerce, reporting upon the rag trade, states that business in rags for papermaking remains unsatisfactory. Thick white and blue linen rags, which are about the only sort in demand, are extremely scarce.

BELGIUM.

AT Ghent last year 4,033 tons of china clay were imported, against 3,741 tons during the previous year.

AUSTRIA.

IN commemoration of the Austrian Emperor's fifty years' jubilee, an exhibition has been opened in Vienna. The Department of the Graphic Arts is not well represented, at least as far as specimens go to show the work of the whole country.

UNITED STATES.

PAPER MATCHES.—A correspondent at Chicago writes that Col. G. W. Condee has brought the paper match to perfection, and is now making arrangements for having it patented in England, France, and Germany. Not the match, but the machinery for making it. The match itself is not patentable, as paper was applied to that purpose some years ago. The match as perfected has more of the character of a wax match than a wooden one.

WOOD PULP PLASTER.—A company has been organized at Warren, Ohio, for the manufacture of plaster from wood pulp. Mr. John C. Pew has been elected president; Mr. William Coale, vice president, and Mr. Charles Pew, secretary and treasurer. A plant will be established at Warren. Toledo and Lima parties are said to be interested with Warren men in the industry.

PAPER TRADE HEAD QUARTERS. — The proposal by the American Paper and Pulp Association to establish head quarters for the trade in New York has not yet taken substantial shape. The committee appointed to carry out preliminary arrangements have not yet succeeded in getting the hundred signatures necessary for the guarantee fund.

THE exports of paper at New York, according to the last weekly list to hand, included: To Liverpool, 51 packages; Manchester, 675 bundles and 146 packages; London, 233 packages; Bolton, 9 cases; Glasgow, 304 packages; Australasia, 354 packages; Brazil, 66 packages; B.W. Indies, 309 packages; and Mexico, 444 packages.

AMERICAN PAPER FOR JAPAN.—Mr. T. Ito, of Yokohama, Japan, is on a visit to the United States. For several years he has handled 310 tons of paper per month from the Willamette Paper and Pulp Company. It is used for the newspaper called the *Asahi*, published at Osaka. The American paper is used for half the circulation, which is entirely amongst the natives. The proprietors do not care to offend the natives by adopting foreign paper altogether, but the manufacture of news in Japan is not sufficient to meet requirements.

TARIFF DECISIONS.—The Board of General Appraisers has rendered the following decision:—17,893—Parchment paper, from L. Apels Papier Manufaktur, Hamburg. March 28th, 1898. Satinert farbig transparent, entered at 62.50 marks per 100 kilos. Satinert naturfarben transparent, entered at 55 marks per 100 kilos. Satinert weiss transparent, entered at 60 marks per 100 kilos. Satinert transparent naturfarben, entered at 55 marks per 100 kilos. Satinert chocolate brown transparent, entered at 62.50 marks per 100 kilos. Discount 2 per cent. Deduct freight to Hamburg, Packing included.

THE PORTUGUESE TARIFF.—Alterations have recently been made affecting the duties on certain chemical products. Chloride of lime is placed on the free list.

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TELEGRAPHIC ADDRESS: "ODONTOID, LONDON."

TELEGRAPHIC ADDRESS: "VONBUSCHE, HAMBURG."

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GEORG: v.d. BUSCHE, Jr. - - HAMBURG.

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Speciality:

Finest Qualities of MECHANICAL PULP.

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Kockums Jernverks Aktiebolag, Konga (formerly Konga Aktiebolag).
VESTFOS CELLULOSEFABRIK, CHRISTIANIA.

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The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

Established 1879.
Printed and Published EVERY FRIDAY by W. JOHN STONHILL, at 58, Shoe Lane, London, E.C.
Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, JUNE 3, 1898.

The State of Trade.

WE have received of late very gratifying reports concerning the condition of the paper trade in this country, most of the large mills being well supplied with orders. It is found a difficult matter, however, to move prices in an upward direction, as foreign competition has a checking influence. During the past month or two less paper has been received from the United States, but increased activity has been shown by Germany, large quantities of paper having been dispatched *via* Holland to British ports. The Scandinavians continue to increase their sales in this country, the product offered being of a comparatively low price. Notwithstanding, British mills have no serious cause to complain of the state of trade, the home demand being particularly good. Unfortunately the export trade is not in such a healthy condition as it ought to be, and, if British makers are to hold their own in the colonial markets, every effort must be made to study the requirements of buyers, or else they will find that foreign competitors will speedily come to the front.

* * *

Engineers Busy.

PAPERMAKERS' engineers are also busy, several firms being engaged in the construction of new papermaking machines, thus indicating that many of the principal British mills feel that production at the present time is below market requirements. Papermakers are quite alive to the value of modern machinery in facing competition, and British engineers are displaying great energy and enterprise in meeting all requirements that may be imposed upon them. British engineers, favoured with a preferential duty, would also do well to look to Canada, as the mills there are likely to extend their trade in all directions as time goes on. One Canadian firm has lately ordered a machine from American makers, who, it appears, are also actively bidding for European custom.

* * *

British Patent Laws.

THE Manchester Chamber of Commerce has done excellent service in directing public attention to many of the anomalies in the British Patent Laws. Immeasurable loss has been sustained by the industries and trade of the United Kingdom in consequence of the unfortunate language of Section 22 of the Patents, Designs, and Trade Marks Act, 1883. The purpose of the Section was to ensure the "working" in this country of inventions for which the privilege of British registration has been granted, either by the patentee or by others. In order to secure this object Section 22 confers upon the Board of Trade authority to order the granting of licenses on equitable terms. Although the Act has been in force for fifteen years this authority has never been used, because the prosecution of a petition for the exercise of such authority involves what is practically a very costly legal contest at the expense of the petitioner. Upon the invitation of the Board of Trade a petition has at last been successfully carried through with the approval of the Manchester Chamber. The facts and issue of the prosecution of it are set forth in a pamphlet prepared by the Chamber, a copy of which ought to be in the hands of all interested parties. The immediate wishes of the Manchester Chamber would be sufficiently met if a short amending Act, dealing with Section 22, were passed by the Legislature. This should embody the following:—"If on petition of any person it is proved to the Board of Trade that (*a*) the patent is not being continuously worked in the United Kingdom within three years from date of application, and in quantities sufficient to supply the public, or (*b*) any person is prevented from working or using to the best advantage an invention of which he is possessed, the Board shall order the patentee or his representative to grant licenses on such terms as to amount of royalties, security of payment, or otherwise as the Board, having regard to the nature of the invention and the

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circumstances of the case, may deem just, and any such order may be enforced by mandamus." The larger question as to whether it is right and expedient to permit a patent to have force here, when it is not granted, or has expired in the possessor's own country, is left out of sight in the pamphlet. But, assuredly, whenever the British Patent Laws receive the thorough overhauling which they require, that aspect of the case is one which ought to have the fullest attention. Possibly one effect of the action of the Chamber will be the appointment of a Royal Commission to investigate the working of the British Patent Laws, when many other grievances may be made plainly evident.

* * *

Canada Seeking "Outlets" for Paper and Pulp.

THE Canadian Government has printed reports of trade commissioners sent to Japan and to the Latin-American group of countries. These reports contain some points of interest to paper manufacturers and those engaged in allied industries. In his report on Japan, Mr. Anderson says that paper making machinery is among the articles of machinery imported from Great Britain, Germany, and the United States. In printing paper alone, he further says, Japan imported over 9,000,000 pounds last year, while of other descriptions of paper it imported to the value of 800,000 yen, equal to 400,000 dols. in gold. The requirements in "news" are met by the cheap, common varieties, running 500 sheets to the ream. The principal sizes needed he describes as follows: 31 by 43, 25 by 37, and 27½ by 39½, the last size being most in demand. Brown wrapping, blue match box, tissue, imitation parchment, ledger, and coloured poster papers are in demand. Native newspapers being established all over the country and the Japanese being an intelligent people, he looks for a great development of the demand for printing paper. He adds: "With our natural advantages in paper stock, Canadian manufacturers should be able to secure a good share of the trade." In regard to pulp he makes the following statement: "Paper making is a large industry in Japan, and wood pulp has already been received from Germany and Sweden. If satisfactory freight rates can be obtained, Canada can readily command this trade with the magnificent resources she possesses in this valuable product." Of the outlook for an export paper trade to the Latin-American republics, Mr. Shephard writes as follows: "Every city is well supplied with newspapers, each nationality having its own daily paper in the large places, and every leading politician having an organ of his own with which to appeal to the people. That Canada does not do a greater export trade in paper, possessing, as she does, all the articles for its manufacture contiguous to each other, and cheap water transportation as well, is one of the most discouraging features to be met with in any attempt to assist in working up an export trade for the Dominion. To all the countries visited this article is found to be exported in very large quantities, yet Canada does nothing."

Stocks and Shares.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices May 25th.
10	10	Bath Paper Mill Co. (Ld.)	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	12⅞—13⅛
3⅝	5	Burnley Paper Co. (Ld.)	10	6—6⅛
7	7	Bury Paper, ord. ,,	6	6¼—6⅜
7	7	do. 6% pref.	6	7⅛—7⅜
2⅝	3	Collin (Darwen) Paper ,,	nil	⅛—⅜
5	5	Darwen Paper Mill Co. "A"	15	11½—12
3⅝	5	do. do. "B"	15	9—9½
10	10	E. Lancashire Paper Co. Ld.	nil	7⅞—8
10	10	do. do. 6% pref.	nil	8½—8¾
5	5	do. do. bonus	nil	4—4½
100	100	Ekman Pulp & Paper Co. Ld. debs.	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	6¾—7
5	5	Hyde Paper Works Co. ,,	nil	1¾—2
2⅝	5	Kelln'r-Part'g't'n P'p Co,,	12*	8—8⅛ x d.
5	5	do. do.	12*	14—14½ x d.
100	100	do. do. debs.	4½	106—108
4	5	N. of Ireland Paper Co. ,,	12½	8¼—8⅜
7	10	Olive Brothers ,,	10	7—7½
1	1	Owen, T. & Co. 6% pref	6	26/6—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
100	100	do. do. debs.	5	112½—113½
5	5	Peebles (A. M.) & Son ,,	8⅛	7¾—8
5	5	do. 5% cum. pref.	5	6¼—6½
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	7—7½
1	1	do. do. cum. pref.	5	1¼—1½
4½	5	Roach Bridge Paper Co. ,,	10	5⅝—5⅞
5	5	Star Paper Co.	10	8¼—8½
3	5	do. do. cum. pref.	10	6¼—6½
0	10	Waterlow & Sons non.-cum. def.	—	13¾—14¼
		do. do. non.-cum. pref.	4	13¾—14¼
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	6⅞—6⅞
10	10	do. do. cum. pref.	7	10¼—10½
100	100	do. do. debs. (red. 1904)	6	105—107
10	10	Brunner, Mond & Co. (Ld.)	20	37⅛—37½ xd
3½	10	do. do. "New" ,,	20	15⅝—15⅞
10	10	do. do. 7% pref. ,,	7	17⅛—17½
5	10	do. do. do. new issue	7	8⅛—8¼
1	1	Castner-Kellner Alkali Co	—	23/—24/-
5	5	Clayton Aniline cum. pref.	6	5⅞—6
10	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅜—11⅝
100	Stock	do. do. deb. stock (red. 1912).	4	105—107
10	10	United Alkali Co. ,,	2	2—2⅛
10	10	do. do. cum. pref.,,	7	9—9⅛
100	Stock	do. mort. deb. (red. after 1001)	5	110—110½

* Interim.

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SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

CHEQUES and Post-office Orders to be Crossed —— and Co., and made payable to W. JOHN STONHILL.

SUBSCRIPTION £1 per Annum, Post Free to all Countries

OFFICES—58, SHOE LANE, LONDON, E.C

Situations Vacant.

FITTER Wanted, must be used to paper mill work and steady. Young man preferred.—Address No. 7,295, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7295

MANAGING FOREMAN required in a mill making Millboards, Leatherboards, Carriage Panels, etc.; must be thoroughly practical. State experience, wages required, and give references.—Address, No. 7,297, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7297

PAPER TRADE.—Wanted, an energetic and experienced Foreman to take charge of Cutting, Glazing, and Reeling Department. None but efficient men need apply.—John Wild and Sons, Radcliffe, near Manchester. 7286

WANTED at once, good Man for Supercalender. Must be steady, industrious and reliable, with good references. State wages.—Address, No. 7,293, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7293

WANTED, BEATERMAN, energetic, pushing man for Brown Mill. Send full particulars of past and present employment, age, references, wages expected, etc., to Medway Paper Mill Co., Ltd., Maidstone. 7298

Situations Wanted.

MACHINEMAN seeks Situation, 13 years' experience in mills making E.S. Writings and Printings. Good references as to character and ability. Address, No. 7,296, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7296

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

MANAGER now open to Re-engagement; 15 years' experience as such in first class mills. Good papermaker, with thorough knowlege of rags, esparto, and wood pulps; experience of limited companies, and used to entire control. Active and energetic; age 42; good references.—Address, No. 7,278, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7278

MANAGER wants Re-engagement; practical papermaker, any class; active and energetic; good references.—Address, No. 7,287, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, E.C. 7287

WANTED, Situation as leading hand on Cutters, Reelers and Supercalenders; 15 years' experience in first-class mills. Good references as to character and ability.—Address, No. 7,291, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7291

WANTED, Re-engagement as Manager or Foreman, in mill making tub-sized writing papers; used to all qualities and modern methods of manufacture. Age 44; active and energetic; good references as to character and ability from first-class mills.—Address, No. 7,271, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7271

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PAPERMAKING MACHINE Wanted, over 72-in. wide; must be in good condition and strong for fast running.—Address, No. 7,289, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7289

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MARKET REPORT.

IMPORTS AND EXPORTS OF

All Classes of Paper Stock

at the Ports of

LONDON	BARROW	HARWICH	GRANTON
LIVERPOOL	GOOLE	DOVER	GRANGEMOUTH
MANCHESTER	GRIMSBY	FOLKESTONE	DUNDEE
RUNCORN	BRISTOL	GLASGOW	BONESS
FLEETWOOD	HULL	GREENOCK	Etc., Etc.
PRESTON	SOUTHAMPTON	LEITH	

For the Week ending Tuesday last.

FROM SPECIAL SOURCES AND TELEGRAMS.

CHEMICALS.—During the past month papermakers' materials have been in fair demand. This week, owing to the Whitsuntide holidays, the market has been rather quiet. ALKALI is firm, AMMONIA 58 per cent. standing at £4 5s. to £4 10s., CARBONATED, 58 per cent. £4 15s. f.o.b. Liverpool, and CAUSTIC, 57-58 per cent. £4 17s. 6d. BLEACHING POWDER is steady at £5 5s. to £5 10s. soft wood on rails. CAUSTIC SODA is a shade easier, 77-78 per cent. being quoted £8 5s. to £8 10s., 70 per cent. £7 to £7 5s., and CAUSTIC BOTTOMS £5 to £5 10s. SODA CRYSTALS are unchanged. RECOVERED SULPHUR, which is scarce, stands at about £5, and SALT CAKE, 22s. 6d. to 23s. on rails in bulk.

Quotations are nominally as follows:—

Alkali, Ammonia, 58%	...	f.o.b. Liverpool		£4	5 0
,, ,, 48%	...	,, ,,		4	0 0
Alum (Ground), tierces	...	,, ,,	2½%	5	5 0
,, barrels	...	,, ,,	2½%	5	15 0
,, tierces	...	,, Hull	2½%	5	2 6
,, ,,	...	f.o.b. Glasgow	2½%	5	5 0
,, (Lump) ,,	...	f.o.b. Liverpool	2½%	4	12 6
,, barrels	...	,, ,,	2½%	4	15 0
,, tierces	...	,, Hull	2½%	4	12 6
,, ,,	...	London	2½%	5	2 6
,, ,,	...	f.a.s. Glasgow	2½%	4	12 6
Alumina Sulphate ...	...	f.o.b. Tyne	net	3	11 3
Aluminoferric Cake, slabs	...	Liverpool		2	15 0
,, ,, tierces		,,		3	2 6
Alumina Cake, slabs...	...	Glasgow		2	10 0
Blanc Fixe	...	f.o.b. Tyne	ne	6	15 0
Bleach	...	,, ,,	net	6	0 0
,, (soft wood) ...	...	f.o.r. Lancs.	net	5	5 0
,, (hard wood) ...	...	f.o.b. Liverpool	net	6	0 0
,, (soft wood) ...	...	landed London	net	6	5 0
Borax (crystals) ...	...	... ...	net	14	0 0
,, (powdered) ...	...	... ...	net	14	10 0
Chloride of Barium ...	...	f.o.b. Tyne	net	6	12 6
Caustic White, 76% ...	...	,, Liverpool	net	8	7 6
,, ,, 74% ...	...	,, ,,	net	8	2 6
,, ,, 70% ...	...	,, ,,	net	7	10 0
,, ,, 70% ...	...	f.o.r. Lancs.	net	7	7 6
,, ,, 60% ...	...	f.o.b. Liverpool	net	6	10 0
,, Cream, 60% ...	...	f.o.r. Lancs.	net	5	15 0
,, ,, 60% ...	...	f.o.b. Liverpool	net	5	17 6
,, Bottoms, 60—62%	...	f.o.r. Lancs.	net	4	12 6
Soda Ash, Carbonated, 58%...		f.o.b. Liverpool	net	4	15 0
,, ,, 48%...		,, ,,	net	4	12 6
,, ,, 58%...		f.o.r. Widnes	net	4	10 0
,, ,, 48%...		,, ,,	net	4	5 0
,, Caustic, 48%...		f.o.b. Liverpool		4	12 6
,, ,, 57-58%...		,, ,,		4	17 6
Hypo-Sulphite of Soda ...		f.o.r. Tyne		4	15 0
,, (10 ton lots)		ex ship Liverp'l	net	5	0 0
Oxalic Acid		f.o.b. Liverp'l	3½% per lb.		3
Salt Cake		on rail, in bulk		1	0 0
Sal Ammonia (1sts)		f.o.b. Liverpool		35	0 0
,, (2nds)... ...		,, ,,		33	0 0
Soda Crystals		,, Tyne	net	2	17 6
,, ...		ex ship Thames	2½%	2	17 6
,, ...		f.o.b. Liverpool	5%	3	0 0
Sulphur, rolls		f.a.s. works	2½	6	5 0
,, flowers		,, ,,	2½%	7	5 0
,, recovered		,, ,,	2½%	5	0 0
Sulphate of Ammonia ...		,, ,,	2½%	9	10 0
,, Copper		,, Liverpool	5%	16	5 0

FOREIGN.—*F.o b. Continental Ports:*

Hypo-Sulphite of Soda, 10-ton lots casks			4	10 0
Sulphate of Alumina, 7-8 cwt. casks net c.i f. L'd'n			3	15 0
Blanc Fixe (c.i f. London)			7	0 0
White Sugar of Lead			27	0 0
Zinc Oxide			19	5 0
Bleaching Powder			5	15 0

CHEMICAL WOOD PULPS. — The market is rather quiet, but prices are well maintained. Manufacturers being well sold for some time to come, do not show any disposition to make reductions.

GREAT BRITAIN.

Prices, ex steamer, East Coast, are nominally as follows:—

Sulphite, Unbleached, Common	...£8 12 6	—	9 0 0
,, ,, Superior	... 9 5 0	—	9 10 0
,, Bleached	... 11 10 0	—	15 0 0
Soda, Unbleached, Common ...	... 8 5 0	—	8 10 0
,, ,, Extra... ...	... 8 15 0	—	9 5 0
,, Bleached	...10 10 0	—	12 0 0

SCANDINAVIA.

Sulphite, Prime, f.o.b.	Kr. 140	— Kr. 150
Sulphate, f.o.b.	Kr. 120	— Kr. 130

FRANCE.

C.i.f. Rouen per 100 kilos. (2 cwt.).

Bisulphite, Unbleached, dry, 1st quality	Frs. 22.75	—	23.5
,, Bleached	33	—	36
Soda and Sulphate, Unbleached, 1st quality...	21	—	22
,, ,, 2nd quality...	19	—	19.50
,, ,, Bleached ...	27	—	34

UNITED STATES.

Sulphite, American, Unbleached ...	$1¾	—	2
,, Foreign, Bleached	3.15	—	3.50
Soda, American, Bleached	1.90	—	2.10
,, Foreign, ,, ...	2.70	—	2.80
,, ,, Unbleached	2.10	—	2.15

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MECHANICAL WOOD PULPS. — A moderate trade is reported at firm prices.

GREAT BRITAIN.

Quotations, ex steamer, East Coast, are nominally as follows:

Aspen, dry		£6 10 0
Pine, dry	£4 8 9	—4 12 6
,, moist	2 5 0	—2 7 6
Brown, dry		4 15 0
,, moist		2 10 0

FRANCE.

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos. (2 cwt.).

Pine, 50% moisture, ordinary	Frs. 9.50—10.50
,, ,, fine	11 —12
,, dry, ordinary	10.50—11
,, ,, fine	11 —12
Aspen ,, fine	15 —16.50
Brown (half-chemical), 50% moisture	10.75—11.25
,, ,, dry	11.75—12.25

UNITED STATES.

F.o.b. Mill, nearest port (per 2,000 lbs.)... 13 dols.

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
258 bales	Ghent		London
10 ,,	Rotterdam		,,
6334 ,,	Drammen	E. Lloyd Ltd	,,
1700 ,,	,,	Becker & Co	,,
320 ,,	,,	Johnsen and Jorgensen	,,
500 ,,	Carlshamn	London Paper Mills Co	,,
172 ,,	,,	A. E. Reed and Co	,,
211 rolls	New York		,,
208 brls.	Ghent		,,
2442 bales	Ternuzen		,,
2000 ,,	Montreal		Liverpool
53 ,,	Rotterdam		,,
94 ,,	Gothenburg		,,
1200 ,,	Drontheim		Hull
280 ,,	Christiania		,,
677 ,,	Gothenberg		,,
712 ,,	Hambro		,,
20 ,,	Antwerp		Manchester
40 ,,	Christiania		,,
2330 ,,	Skein		,,
880 ,,	Drammen		,,
480 ,,	Skein		,,
1732 ,,	Montreal		Bristol
250 ,,	Oporto		Glasgow
2156 ,,	Sannesund		Preston
269½ tons	,,		,,
561 bales	Skien		,,
1506 ,,	Fredrikshald		,,
160 ,,	Drammen		,,
850 ,,	Arendal		,,
310 ,,	Drontheim		Grangemouth
1160 ,,	Christiania		,,
800 ,,	Hambro		Leith
56 ,,	Rotterdam		,,
80 ,,	Copenhagen		,,
803 ,,	Sannesund		,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	486 bales	NORWAY ...	21097 bales
CANADA ...	3732 ,,	... ...	269½ tons
DENMARK ...	80 ,,	PORTUGAL ..	250 bales
GERMANY ...	1518 ,,	SWEDEN ...	1443 ,,
HOLLAND ...	2561 ,,	U.S.A.	211 rolls

STRAW PULPS. — Steady enquiry; prices firm.

Prices, c.i.f. London, Hull, or Leith:

German, dry, No. 1	£14 0 0
,, No. 2	13 0 0

STRAW.—Prices:

Oat, c.i.f. London ...	£1 17 0	F.o.r. Goole ...	£1 17 6
Wheat ,, ...	1 17 0	,, ...	1 17 0
Rye ,, ...	2 10 6	,, ...	2 10 6

WASTE PAPERS. — Quotations are nominally as under:

Cream Shavings ...	10 0	Small Letters... ...	3/3
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns ...	3/3
White Waste	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets	3/0
Blue Paper	2/0	Strawboard Cuttings	1/0
Crushed News ...	2/0	Jacquards	2/6

For Export: 2s. per ton extra.

ESPARTO.—The enquiry has been very slow, and only a small business done at prices which mark a distinct advance in African. Spanish has again been enquired for, but sellers maintain their former attitude of reserve, as a rule, and make no offer. Steamers are scarce, rates of freights high, and imports are consequently falling off.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston, and Tyne Docks, are nominally as follows:

Spanish—	Fair to Good	£4 17 6—5 5 0
	Fine to Best	5 10 0—5 15 0
Oran—	Fair to Good	2 17 6—3 0 0
	First Quality	3 5 0—3 7 6
Tripoli—	Hand-Picked	3 2 6—3 5 0
	Fair Average	2 17 6—3 0 0
Bona and Philippeville ...	... ...	3 5 0—3 17 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
1060 tons	Arzew	R. H. Hay and Co	Granton
473 ,,	Bona	Crookston Bros	,,

HOME RAGS.—Business this week has been rather quiet owing to the holidays. London and provincial reports show that the market is rather bare of supplies, and that mills have no large stocks on hand.

LONDON.

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/9
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London) ...	17/0-17/6	,, No. 3 ...	5/0
Outshots (selected)	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary)	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country ,,	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country ,, ...	2/0	Gunny	2/0-2/3

BRISTOL.

Fines	16/0	Clean Canvas ...	14/0
Outshots	9/6	Second ,, ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging ...	2/6	Tarred Manilla ...	6/0

MANCHESTER.

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares ...	2/6-3/0

EDINBURGH.

Superfines	15/0	W. Manilla Rope	7/0
Outshots	12/0	Tarred Manilla Rope ...	5/6
Mixed Fines ...	14/0	,, Hemp Rope	8/0
Common Seconds	7/0	Rope Ends (new)	6/0
First ,,	10/0	,, ,, (old)	4/0
Prints	5/0	Bagging	2/3
Canvas (best) ...	15/0	,, (clean) ...	3/0-4/0
,, 2nd ...	8/0		
Black Cottons ...	2/6		

GLASGOW.

Fines	12/6-16/0	Canvas No. 1 ...	15/0
Blues	4/6	,, No. 2 ...	10/0
Common Blues ...	3/3	Manilla Rope ...	8/0
Bagging	4/0	Tarred Hemp ...	5/0

DUBLIN.

White Cuttings ...	16/0	Mill Bagging ...	2/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp ...	6/0
Light Prints ...	2/6	Rigging	10/0
Black ,, ...	1/6		

JUTE.—Prices:

Good White	£15 0 0—16 10 0
Good	13 0 0—14 10 0
Medium	10 0 0—12 10 0
Common	7 0 0— 9 0 0
Rejections	6 10 0— 8 10 0
Cuttings	3 0 0— 4 0 0

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FOREIGN RAGS.—The demand for Foreign Rags for British mills is rather quiet just now, except for French stock, which is in fairly good request. The British imports during the past week were as under:

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
42	Bremen	Hull	52	Antwerp	Goole
22	Hambro	,,	52	Ghent	,,
232	Amsterdam	,,	61	Rotterdam	,,
201	Copenhagen	,,	125	Hambro	,,
17	Harlingen	,,	199	Boulogne	,,
16	Rotterdam	,,	391	Hambro	Grimsby
131	Bordeaux	,,	353	Dieppe	,,
138	Ghent	,,	35	Jersey	Southamptn
92	Amsterdam	,,	9	Guernsey	,,
403	,,	London	228	Bordeaux	Leith
70	Treport	,,	220	Alexandra	,,
116	Rouen	,,	147	Ghent	,,
62	Ternuzen	,,	14	Copenhagen	,,
26	Hambro	,,	44	Alexandria	L'pool
52	Rotterdam	Goole	35	St. Nazaire	,,

Totals from Each Country:

BELGIUM ...	797 bales	FRANCE ...	1242 bales
CHANNEL Isles	44 ,,	GERMANY ...	607 ,,
DENMARK ...	215 ,,	HOLLAND ...	492 ,,
EGYPT ...	244 ,,		

FRENCH.

Ex-ship London; Liverpool, Hull, 7/6 extra; Manchester, Bristol, Leith, 10/0 extra.

French Linens, I	21/0	Black Cotton ...	2/0
II 15/6; III ...	9/6	Blue Linen ...	7/6
White Cottons, I	15/6	New Light Prints	16/0
II 12/0; III ...	8/9	New White Cuttings	20/0
Coloured Cotton	3/6	,, Stay ...	15/0

BELGIAN.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6; Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens, No. 1	21/0	House Cloths... ...	2/9
,, ,, No. 2	16/0	Old Bagging (solid)...	3/0
,, ,, No. 3	12/0	,, ,, (common)	2/6
Fines (Mixed) ...	12/0	NEW.	
Grey Linens (strong)	9/6	White & Cream Linens	35/0
,, (extra)	14/0	White Cuttings ...	22/0
Blue Linens	8/0	Unbleached Cuttings	21/0
White Cottons No. 1...	18/0	Print Cuttings... ...	8/0
,, No. 2...	15/0	FLAX AND HEMP WASTE.	
Outshots No. 3... ...	10/0	Flax Waste, washed and dried ...	10/0
Seconds No. 4	8/0	Fair	8/0
Prints (Light)... ...	8/6	Flax Card Waste ...	6/0
Fustians (Light) ...	4/0	Hemp Waste, No. 1...	8/0
Fustians (Dark) ...	3/0	,, ,, No. 2 ..	3/0
Black Cottons	3/0		
Hemp Strings (unt'r'd)	2/3		

DUTCH.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith; Liverpool; 12/6 Manchester.

Whites, No. 1 ...	14/0	Mixed Hemp Rope Coils...	8/0
,, No. 2... ...	9/9	Broken (in bags) ...	6/0
,, No. 3... ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens	9/0	do. Tarred ,, ...	4/9
Clean House Cloth ...	3/0	Canvas No. 1	14/3
Mixed Fustians ...	3/0	,, No. 2	9/9
Coloured Prints ...	2/7½	,, No. 3	6/3
Dark Prints	2/1½	W. Untarred Rope ...	9/3
Blue Cottons	5/0	Paper Shavings ...	5/0
Light Lilac Cottons	7/0	Free from wood ...	7/0

GERMAN.

HAMBURG: *F.o.b.*

NWC	19/0	LFX Second ditto ...	7/0
SPFFF	18/0	CSPFFF	14/0
SPFFF and SPFF ...	17/0	CSPFF	10/0
SPFF	14/0	CFB	6/0
SPF	11/0	Dark Blues (selected)	11/0
CCC	5/0	Wool Tares	8/0
CFX	4/0	Jute, No. I., 6/0: No. II.	5/0
White Rope	6/0		
FF Grey Linens ...	8/0		

STETTIN: *C.i.f. Hull, Leith, Tyne and London.*

SPFFF and SPFF	17/0	LFB (blue)	4/0
SPF	11/0	CSPFFF	10/0
FF	8/0	CSPFF	16/0
'G	8/6	CFB (blue)	6/0
'FX	7/0	CFX (coloured) ...	4/0

PRUSSIAN.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (cotton)	4/6
SPF	12/6	Jute I	3/0
FG	10/0	,, II	2/0
LFB	8/0	Rope I	8/0
FF	5/6	,, II	6/0

NORWEGIAN.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred)	8/3-9/0	2nd Canvas	7/0
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny	3/6-5/0
Best Canvas ...	11/9-12/0	Mixed	2/6-2/9

TURKISH.

F.o.b. Constantinople, Smyrna, and Salonica.

1st White Cottons* ...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons	1/3	,, Small	4/6
Coloured ,, ...	1/3		

*3/0 at Smyrna and Salonica.

BALING TWINE.—Prices:

	Thick.	Medium.	Fine.
Hemp ...	4d. per lb.	4¼d. per lb.	5d. per lb.
Mixed ...	3¼d. ,,	4d. ,,	4¼d. ,,

STARCH.—Prices are well maintained. Rice firmer.

F.o.r. London, less 2½%:

Maize—	Crisp ...	...	...	...	...	£9 10 0
	Pearl ...	...	...	...	...	8 5 0
	Powder	...	...	...	...	8 0 0
	Special	...	...	...	...	14 0 0
Farina—	Prime ...	...	...	...	...	12 0 0
	B.K.M.F.	...	...	...	...	14 0 0

Delivered, less 2½:

Rice—	Special (in chests) ...	...	...	...		19 0 0
	Crystal (in bags) ...	...	...	...		18 10 0
	Granulated (in bags)	...	...	...		17 10 0
Dextrine ...	...	...	...	...	...	16 0 0

COLOURS.—Market quiet. Quotations are nominally as follows:

Mineral Black	...	Per Cwt.	£0	3 0
,, (Superior)...	,,		0	4 6
Ivory Black (Pure)	,,		0	12 0
Ochre	,,		0	2 3
French (J. C. Ochre)	...	Per Ton	3	0 0
Chrome (Pure)	...	Per Cwt.	2	0 0
Red Oxide	,,		0	4 6
Umber (Devonshire)	,,		2	10 0
,, (Turkish)	,,		2	0 0
Lamp Black...	,,		0	5 0
Ultramarine (Pure)	,,		1	15 0
Cochineal	...	Per lb.	0	1 3

PASTE COLOURS, with 60% of Colour: (less 2½% d/d.)

Orange Pulp...	...	Per Cwt.	2 0 0
Golden Yellow Pulp	...	,,	1 10 0
Lemon Yellow Pulp	...	,,	1 10 0
Prussian Yellow	...	,,	1 16 0
Green (free from Arsenic) ...	...	,,	1 16 0
Paste Blue, 20%	...	,,	0 18 0
,, 33%	...	,,	1 6 0
,, 45%	...	,,	2 5 0
Imperial Yellow (dry)	...	,,	0 16 0

SIZING.—Market firmer; raw materials scarce.

English Gelatine ...	... Per cwt.	£4 10	0—6	0 0
Foreign ,, ...	,,	3 10	0—5	0 0
Fine Scotch Glues	,,	2 5	0—3	0 0
Best Long Scotch Glues ...	,,	2 0	0—3	0 0
Common Black	,,	1 5	0—1	8 0
"Town" Glues	,,	1 18	0—2	5 0
"Bone" Glues	,,	1 6	0—1	10 0
Foreign Glues	,,	1 8	0—1	15 0
Bone Size	,,	5	6—	10 0
Gelatine Size	,,	6	6—	10 0
Dry B.A. Pieces	,,	2 10	0—2	15 0
,, English Pieces	,,	1 15	0—2	5 0
Wet ,, ,, ...	,,	8	6—	9 0
,, Sheep Pieces	,,	3	0—	4 0
Buffalo Hide Shavings ...	,,	1 12	0—2	0 0
,, Picker Waste ...	,,	1 12	0—1	15 0

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
5/0	5/3	5/6	5/9	6/3	6/9	7/0	7/6	8/0	8/9	9/6

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MINERALS.—There is a good demand for CHINA CLAY, particularly for the best qualities. MINERAL WHITE is in steady request, and a good business is being carried through in FRENCH CHALK. SATINITE and SNOWDRIFT have an increased sale.

Mineral White (also known as Terra Alba, Gypsum, and Sulphate of Lime), per ton f.o.r. or boat at makers' works, less 2½% :—

Superfine ...	...	...	£1	8	0	del. Lancs.	£1	18	0
Pottery Superior	...		1	4	0	,,	1	14	0
Ball Seconds	...	...	1	0	0	,,	1	10	0
Seconds ...	...	...	0	15	0	,,	1	5	0
Thirds ...	...	...	0	11	0	,,	1	1	0

(Manchester, 2s. per ton less.)

China Clay, in bulk, f.o.b. Cornwall, 9s. to £1 3s. 6d., bags 4s., and casks 9s. 6d. per ton extra; delivered Lancashire, £1 18s. 0d. to £2 1s. 6d. (for best papers); f.o.r. London, in casks, £2 5s. 0d. per ton; f.o.b. Liverpool, in 5 cwt. casks, £2 2s. 0d. to £2 10s. 0d.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, £2 19s. 0d., £3 4s. 0d., £3 13s. 6d., and £3 17s. 6d. per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15s. 0d. to £5 2s. 6d. per ton of 10 bags.

Superfine Hardening, f.o.r. works, £2 0s. 0d. to £2 2s. 0d.

Patent Hardening (2 ton lots), f.o.r. Lancs., £3 5s. 0d.

Snowdrift (Paper Toughener), in ton lots, 12s. 0d. per cwt.

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16s. 6d.; calcined, £10 7s. 6d.

Magnesite (in lump), £1 19s. 6d. per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 0s. 0d. to £4 10s. 0d. per ton c.i.f. London, Manchester, and Glasgow.

Asbestos, brown grades, £14 0s. 0d. to £14 12s. 6d.

Sulphate of Barytes, No. 1, £3 4s. 0d.; No. 2, £2 12s. 0d.; No. 3, £2 2s. 0d.; No. 4, £1 17s. 6d. per ton, according to quality.

Bauxite, minimum alumina, 60%, 16s. 3d. f.o.b.

Pyrites (non-cupreous), f.o.b. shipping ports, 4⅜d. per unit.

Satinite, £3 0s. 0d. to £3 6s. 6d., in casks, f.o.b. Liverpool or Manchester.

Whiting, f.o.b., 10s. 6d. to 12s. 3d. per ton.

Sulphate of Alumina, £4 2s. 6d. to £4 15s. 0d. per ton del.

Hydrate of Alumina, £12 10s. 0d.

LIME.—The present price is 10/6 per ton f.o.r. works.

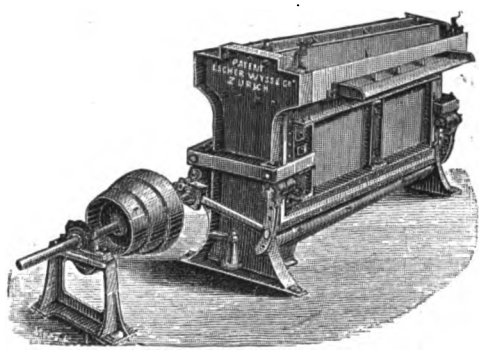
METALS.—LONDON: COPPER easy; TIN in better demand; LEAD steady. Tuesday's official closing prices :—

Copper—								
G.M.B., cash ...	...	...	...	£51	2	6	51	7	6
,, three months		...	...	51	6	3	51	11	3
Tough ...	...	...	...	54	0	0	54	15	0
Best selected ...	...	...	...	54	10	0	55	7	6
Strong Sheet ...	...	...	...	61	10	0	—		
Tin—									
Fine foreign, cash ...	...	...		67	10	0	68	0	0
,, three months...		...		68	1	3	68	11	3
Lead—									
Spanish ...	...	...	...	13	10	0	13	12	6
English ...	...	...	...	13	15	0	13	17	6

ESCHER WYSS & CO.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

OVER 100 AT WORK.

FACTS SPEAK FOR THEMSELVES—

The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES—

SUPERIOR to any other System for its Numerous Advantages as:

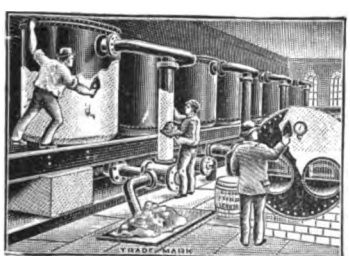
Large Production with any kind of Pulp.
No Stoppage for Cleaning.
Most Regular and Quite Noiseless Working
Little room taken up on the Machine, &c.

AGENT—

ALPH. STEIGER C.E.

16, MINCING LANE, LONDON, E.C.

WADE'S Patent Boiler-Covering Cements



LAST A LIFE-TIME.

For Covering Marine and Stationary Boilers, Water Heaters, Cylinders. Steam Pipes, Stills, Hot Liquor Tanks, Hot Water Pipes, Cisterns, Cold Water Pipes, &c.

Patentees of

WADE'S PATENT BOILER SCALE DISSOLVING FLUID

and ALL KINDS OF LUBRICANTS for Stauffer's and every description of Lubricators; also

WADE'S Patent Engine and Hydraulic Packings,

and ALL KINDS OF DISINFECTANTS.

Estimates Free. Agents Wanted.

J. L. WADE & Co., Ltd., Manor House Wharf Works, Nine Elms Lane, LONDON, S.W. 3134

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls.
BELGIUM	1321	19	—
DENMARK	38	—	—
FRANCE	937	20	—
GERMANY	1234	42	20
HOLLAND	11741	27	—
NORWAY	1831	—	—
SWEDEN	2155	11	1033
U.S.A.	2311	33	143

Including the Following:—

Quantity	From	Importer	Port
26 bales	Copenhagen	Tuckert & Co	London
12 ,,	,,	J. Spicer & Son	,,
52 ,,	Christiania	Morgan & Co	,,
8 ,,	,,	J. Spicer & Co	,,
49 ,,	,,	Claydon	,,
7 ,,	,,	P. Sabel & Co	,,
13 ,,	,,	Cookson & Co	,,
6 ,,	,,	H. Beer	,,
3 ,,	,,	W. Doggett	,,
50 ,,	,,	W. E. Bott & Co	,,
10 ,,	,,	J. Hamilton	,,
13 ,,	,,	Crabb & Co	,,
93 ,,	Danzig	Becker & Wagner	,,
46 ,,	,,	J. Lindsay	,,
10 ,,	Gothenburg	Alsing & Co	,,
8 ,,	,,	Green & Co	,,
201 ,,	,,	J. Eberstein	,,
302 ,,	,,	J. Spicer & Son	,,
10 ,,	,,	Brown & Brough	,,
33 ,,	,,	Becker & Wagner	,,
199 ,,	,,	R. L. Lundgren	,,
11 ,,	,,	J. Hamilton	,,
7 ,,	,,	S. H. Holman	,,
35 ,,	,,	Schenkenwald	,,
21 ,,	,,	Saunders & Son	,,
21 ,,	,,	Crabb & Co	,,
8 ,,	,,	Cookson & Co	,,
1018 rolls	Norrkoping	Skarblacka & Co	,,
56 bales	,,	,, ,,	,,
40 ,,	Stockholm	Rosendale & Co	,,

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	4020	358	1377
ARGENTINE	9	3	14
AFRICA	183	272	283
BELGIUM	4	46	20
B. W. INDIES	21	34	3
CAPE COLONY	27	77	446
CANADA	—	67	50
CHINA	12	43	113
CHANNEL ISLES ...	—	—	32
FRANCE	176	11	65
GERMANY	—	2	18
GREECE	—	50	9
HOLLAND	—	10	90
INDIA	868	377	293
JAPAN	—	35	8
MAURITIUS	5	—	—
MALTA	—	3	—
NEW ZEALAND... ...	213	388	952
RUSSIA	—	6	—
SPAIN	5	—	—
SETTLEMENTS ...	—	—	15
TURKEY	—	4	—

FROM GLASGOW.

AUSTRALASIA	—	663	200
INDIA	—	6	—
NEWFOUNDLAND ...	—	12	—
NEW ZEALAND... ...	19	—	9
W. INDIES	—	49	—

Foreign Strawboards, &c.

The following were the imports of straw boards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

3751 b Rotterdam Liverpool | 400 b Rotterdam London
342 ,, Ghent ,, | 3131 ,, ,, Manchester

WOOD PULP BOARDS.

1374 b Hambro London | 83 b Christiania Hull
43 ,, Christiania Grngmth | 420 ,, Hambro ,,

MILLBOARDS.

420 b Hambro Goole | 8735 b Harlingen Hull

PASTEBOARDS.

3359 b Harlingen Leith | 400 b Rotterdam London
83 ,, Trieste Glasgow | 79 ,, New York Liverpool

b—bales. c—cases. r—rolls. cr—crates.

"A German Expert on American Fourdriniers."

To the Editor of the WORLD'S PAPER TRADE REVIEW

SIR,—In your yesterday's issue, we find a translation of Mr. E. Kirchner's report in the *Wochenblatt* of 21st inst., on the new paper machine of Messrs. Kubler and Niethammer, but notice that apparently by an oversight you have omitted the name of the makers of this machine, which comes immediately after "Fourdrinier Papier-maschine," viz., the Pusey and Jones Company, Wilmington, Delware, U.S.A. We feel certain that this omission on your part is not intentional, and would ask you, therefore, in fairness to the Pusey and Jones Company (whose sole representatives we are for Great Britain and Ireland) to insert a notice in your next issue, mentioning that the machine reported on by Mr. E. Kirchner was made by them, or, in other words, that this is the third machine the Pusey and Jones company have delivered to Messrs. Kübler and Niethammer.

Yours truly,
JOHNSEN AND JORGENSEN.

May 28th, 1898.

THE DARGUE ACETYLENE GAS AND ELECTRICAL CO. has been registered with a capital of £5,000, in £1 shares (of which 3,000 are 5 per cent. cum pref.), to adopt a certain agreement dated March 19th with William H. Dargue, electrical engineer, of 72, Grey-street, Newcastle-on-Tyne, and to carry on the business of patentees and manufacturers of acetylene gas apparatus, electricians, mechanical engineers, and suppliers of acetylene and other gas and electricity.

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A. WERTHEIM & Co.,

HAMBURG,

SUPPLY ALL KINDS OF

Sulphite,

Soda and

Mechanical

WOOD PULPS.

OFFICES AT:

CHRISTIANIA (Norway)	Lille Strandgade No. 5.
GOTHENBURG (Sweden)	Lilla Kyrkogatan No. 2.
MANCHESTER	Guardian Buildings, opposite Exchange.
LONDON	77a, Queen Victoria Street, E.C.
PARIS	Rue de Londres No. 29.
ANGOULEME (France)	Boulevard Alsace Lorraine 38.
LYONS	Rue Montesquien 96.
MILAN	Via Princ Umberto 5.
SAN SEBASTIAN (Spain)	Paseo de Salamanca No. 5.
MOSCOW	Zwetnoi Bulewar House Toropoff.
NEW YORK	99, Nassau Street.

Telegraphic Address:

"WERTHEIMO, HAMBURG."

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Paper Trade of Belgium.

An American Consul has recently dispatched a report on the paper trade of Belgium, where he thinks that there is an excellent market for many of the specialities manufactured by the mills in the United States. He states that Belgium, without doubt, is a paper-producing country; but its mills produce neither as fine qualities nor generally at as cheap prices as those of the United States, excepting probably in the line of wall papers.

The relations of the United States with Belgium have heretofore been chiefly as purchaser, but the trade has not been large. The returns of the declared exports from the Brussels, Antwerp and Leige consulates are about 80,000 dols. to 90,000 dols. annually. The figures of the Minister of Finance of Belgium do not indicate quite as large an amount. A compilation of his printed returns of trade with the United States shows the exports to be:—1893, 803 tons, 58,345 dols.; 1894, 806 tons, 68,785 dols.; 1895, 446 tons, 41,572 dols.; and 1896, 536 tons, 45,518 dols. In regard to the Belgian imports from the United States no returns are published dealing with 1893, but in 1894 the quantity was 103 tons and the value 9,912 dols.; 1895, 223 tons, 21,519 dols.; and 1896, 28 tons, 2,745.

In cultivating trade with Belgium, the American consul points out that there is the question of freight. There is direct communication between Boston and Antwerp. From Antwerp, Brussels is distant only twenty five miles, Ghent thirty miles, and Liege seventy-five miles. These cities are the principal distributing points for Belgium. For Ghent there is also a water route *via* London or Hull and the Terneuzen Canal. The duty on foreign-made papers (1.54 dols. on wall papers and 77 cents on all other kinds per 220.5 pounds) is high. Nevertheless Germany, France, and England succeed in selling in this market in competition with its home-made products.

The following figures show the Belgiam imports and exports of paper:—

IMPORTS.

Paper of All Kinds.

1893	8,528 tons	$805,395
1894	9,913 ,,	981,470
1895	10,382 ,,	1,013,530
1896	10,683 ,,	1,056,876

All Kinds, Cardboard and Wall Paper Excepted.

1893	7,266 tons	$637,388
1894	8,573 ,,	827,345
1895	8,685 ,,	838,118
1896	8,785 ,,	847,762

EXPORTS.

Paper of All Kinds.

1893	28,859 tons	$2,458,391
1894	30,495 ,,	2,825,866
1895	31,642 ,,	2,957,077
1896	40,891 ,,	3,830,259

All Kinds, Cardboard and Wall Paper Excepted.

1893	25,726 tons	$2,256,877
1894	27,490 ,,	2,652,799
1895	28,632 ,,	2,763,034
1896	37,393 ,,	3,606,417

Cardboard.—The imports into Belgium of cardboard amounted to 963 tons, valued at 28,712 dols., in 1896; while the exports amounted to 2,771 tons, valued at 81,501, dols. during the same year. The imports are from Germany and Sweden and Norway chiefly, while the exports went to the Argentine Republic (23,550 dols.), England, 23,247 dols.), and British India (10,305 dols.); the balance going to various countries.

Wall Paper.—The imports of wall paper in 1896 were 935 tons, valued at 180,402 dols., the principal supplies being drawn from Germany (68,102 dols.) and France (62,712 dols.). The exports of wall paper amounted to 727 tons, valued at 140,334 dols., the chief markets therefor being France (74,813 dols.), and Holland (24,312 dols.). The import duty on wall paper is 1.54 dols. per 220·406 pounds. Notwithstanding this duty, foreign wall papers find a large market in Belgium. Ordinary Belgian wall paper sells at from 2 to 15 cents per roll of 8 metres (8.75 yards). An excellent embossed paper sells for 27 cents per roll, while the newly-designed and best leather embossed paper sells as high as 5.80 dols. per roll.

Wrapping Paper.—Belgian-made wrapping paper sells for from 1½ to 3½ cents per pound; while paper from Germany, notwithstanding the duty, sells for 77 cents per 220 pounds, and is thus competing with the home article. Wrapping paper is used chiefly by manufacturers for lining cases and boxes for wrapping goods before final packing, etc, the demand by retailers being very small.

Blotting Paper.—There is a good demand for the better qualities. The prices, as quoted by one of the leading manufacturers, per ream of 500 sheets (5 per cent. discount for cash), are as follows:—

Size. Inches.	Weight. Pounds.	Price.
17½ by 22½	14 1-3	$0·87
19¾ by 26⅜	21	1·46
17¾ by 22½	53	5·79

During 1896 the imports and exports of all kinds of paper (wall paper and cardboard excepted) from and to the principal countries mentioned were as follows:—

From—	IMPORTS.	
Germany	4,705 tons	$454,002
Sweden and Norway	1,159 ,,	111,873
England	777 ,,	75,012
Hamburg	665 ,,	64,155
To—	**EXPORTS.**	
England	17,295 tons	$1,669,093
Holland	5,144 ,,	496,412
France	3,059 ,,	295,224
Brazil	1,970 ,,	190,147

In order to show the great increase in the exportation of paper, etc., from Belgium to Great Britain, it may be stated that the figures in 1893 were only 10,208 tons, and the value 875,563 dols.

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Paper-Drying Apparatus.

A patent has been granted for an invention which relates to apparatus for drying a web of paper which has been coated with colouring matter, usually containing clay, the object of the coating being to produce a specially-prepared surface upon the paper adapted to receive impressions from half-tone cuts. While the coating is in a damp condition upon the paper it is very easily marred or scratched by contact with any devices which may be used to positively support the paper in its progressive movement from the coating devices.

The invention has for its object to provide means for supporting all portions of the web on which the coating is damp wholly by atmospheric pressure, and for drying the coating while thus supported, and before it can come in contact with any positive supporting device, such as a roll.

In the accompanying drawings, Fig. 1 represents a longitudinal section, showing the parts of a paper-drying machine which embody the features of novelty invented. Fig. 2 represents a perspective view of one of the air-delivering nozzles shown in Fig. 1. Fig. 3 represents an enlarged sectional view of the nozzle shown in Fig. 2. Fig. 4 represents a modification hereinafter referred to.

In the drawings, *a* represents a web of paper, which is progressively moved in the direction indicated by the arrow *b* in Fig. 1 by suitable feeding means, such as a pair of positively driven feed rolls, *c c*, between which the web passes from the devices which apply the coating.

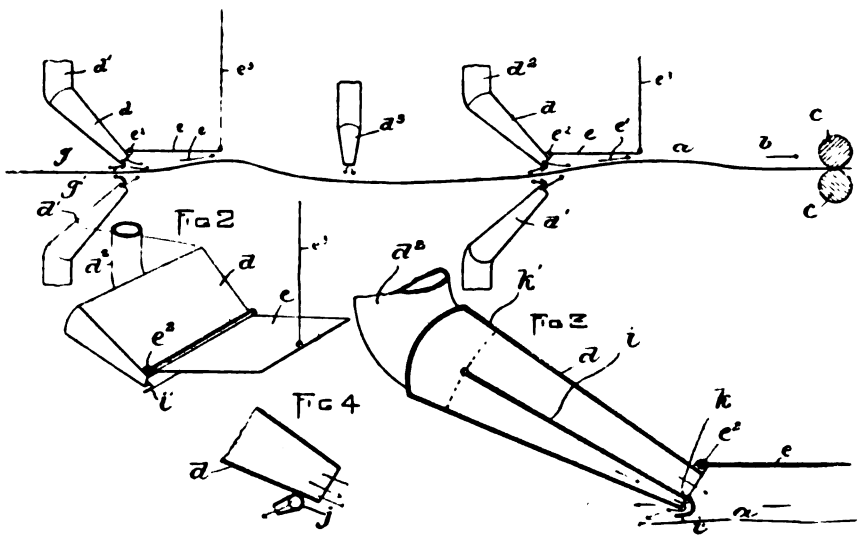
The coating devices are not shown, as they may be of any suitable character, suitable coating devices being in common use and well known.

d represents an air-delivering nozzle, which is suitably connected with an air forcing apparatus, such as a fan blower, and is arranged to deliver a blast of air obliquely upon the upper side of the web *a*, and either in approximately the direction of motion of the web or in approximately the opposite direction.

e represents a plate or air guide, extending from the mouth of said nozzle or from a point near said mouth, and forming one side of an air passage *e'*, arranged to receive the blast of air, the other side of said passage being formed by the portion of the web *a* which is passing under the said guide. It will be seen that the blast of air delivered by the nozzle *d*, in passing through the passage *e'*, causes an increase of atmospheric pressure upon the walls of said passage, and as the wall formed by the web *a* is flexible, the atmospheric pressure having a tendency to contract the passage *e'* lifts the flexible wall thereof—namely, that portion of the web which is passing under the guide. The result is that the said portion of the web is floated or suspended in the air without contact with any substance or object which can mar or injure its coating, the air blast in the passage *e'* preventing the web from touching the guide *e*, while the pressure of the external air prevents contact of the web with any object below the guide *e*. In this way the inventor claims that he can effectually support a long section of partially coated web and ensure its freedom from contact with any solid object. The air delivered by the nozzle *d* is preferably heated to facilitate the drying of the coating.

If the paper is coated on both sides, a similar nozzle *d'* is arranged to deliver a blast of air against the under side of the web, at a point immediately opposite the nozzle *d*, this lower blast being also preferably heated and serving not only to dry

Fig 1



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the coating on the under side of the web, but also to assist the action of the atmospheric pressure in floating or supporting the portion of the web under the coating.

The air guide *e* is preferably adjustable vertically. The guide is here shown as hinged at e^2 to a fixed support, which may be the nozzle *d*, its opposite edge being adapted to swing toward and from the web and supported by a cord or chain e^3 by means of which the height of the swinging edge may be varied. By raising the swinging edge of the air guide the height at which the adjacent portion of the web is supported by atmospheric pressure is correspondingly raised, or by depressing the swinging edge of the air guide the web is supported at a correspondingly depressed position.

Experiments have shown that the force of the air blast delivered by the nozzle *d* determines the atmospheric pressure upon the guide *e* and upon the adjacent portion of the web.

It will be seen that the nozzles *d* and *d'*, arranged obliquely with relation to the web, form V-shaped spaces *g g'*, into which external air is drawn by the vacuum created by the blast of air delivered upon the web. To prevent cold air, as well as air laden with dust, from being thus brought into contact with the portions of the web upon which the air blasts impinge, means are provided for directing blasts of air backwardly or in a direction substantially opposite to the directions of the blasts delivered by the nozzles *d d'*, the said backward blasts of air forming, as it were, atmospheric dams, which prevent the access of air to the web through the spaces *g g'*. In Figs. 1 and 3 are shown as the means for accomplishing this result partitions *i* in the nozzles *d d'*, each partition having a backwardly extending lip *i'* at the mouth of the nozzle arranged to deflect portions of the air passing through the nozzles, as clearly indicated in Fig. 3.

In Fig. 4 an air passage *j* is shown as formed upon the rear side of the nozzle *d*, said passage receiving air through an independent supply pipe and having an outlet or outlets arranged to deliver the air backwardly upon the surface of the web.

The passage *j* is preferably adjustably supported, so that it can be turned to vary the angle at which the backward air blast is delivered through its outlet or outlets.

The partition *i* is preferably pivoted at *k* to the nozzle or to any suitable support, and is free to swing at its end *k'*, so that it may be adjusted to deflect any desired portion of the air passing through the nozzle, provision being thus made for varying the force of the backward blast. Any suitable means may be provided for securing the partition *i* in any position to which it may be adjusted.

In practice a series of nozzles *d* and accompanying air guides or floaters *e* will be employed, the number depending on the weight of the web and its coating. For drying coated paper, such as is used for half-tone printing, the inventor finds it advisable to employ two or more nozzles and floaters and to locate each nozzle and floater about 10 feet from the next.

In case it is found that the upward displacement of the web is too great the lower nozzles *d'* may be arranged to alternate with the upper nozzles *d* instead of being directly under them, or a nozzle d^3 may be arranged between each nozzle *d* and the next, the nozzles d^3 directing blasts of air downwardly on the web and limiting its upward displacement under the guides *e*.

It is obvious that the invention may be used for drying coatings applied to a web of any flexible material adapted to be supported in the manner described—such, for example, as window shade cloth.

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Castner-Kellner Alkali Co., Ltd.

An Issue of Debentures.—Patent Rights and Litigation.

The second ordinary general meeting of the shareholders of the Castner-Kellner Alkali Company was held on Friday, last week, at Cannon-street Hotel, E.C.

Mr. WILLIAM MATHER (the chairman of the company) presided. He said: This is the third meeting of the shareholders since the formation of the company, and I am happy to be able to point to the statements in the report now before you, showing that the enterprise, so far as one-half of its development is concerned — namely, that two installations out of four have been put to work successfully — has, in our opinion, justified the expectations we had formed. The first paragraph of the report deals with the trading account. You will observe that we have been able to carry to profit a sum of upwards of £9,000, which has been earned, practically, from only one-fourth of our proposed installation — 1,000 horse-power. The earnings were limited to little over half of the year after we had begun. The profits derived from that account have been so satisfactory that your directors have gone forward with very good hearts in completing the rest of this enterprise, first by getting the second installation into full working order, and laying down the foundation for proceeding with the utmost energy with the other two installations of 1,000 horse-power each, which will then complete the full enterprise which we started upon two years ago. The profitableness of this process has bourne out our expectations. The second installation is now running fully equipped with all the means to develop as much product as the first installation. In connection with the output of these installations I should like to remind the shareholders that we have entered into a very satisfactory arrangement as to the disposal of our product. The greater part of it is practically sold before we make it, so that every ton we can produce week by week is absorbed by the contract which was made a year ago, and which has, I am glad to say, two years to run from July 15th last, a contract which fixed the definite price at which we can sell the major portion of our product. The erection of the third and fourth installations of 1,000 horse-power each will, as I said before, complete this enterprise. These two installations are very far advanced, so far as the buildings are concerned and part of the equipment, and in the course of the year—by the end of the year at any rate—we expect to have the full plant, the full 4,000 horse-power, steadily at work developing the products which we have to put upon the market. It will thus be seen that within what is really a very short period from the time we received any money to spend on these great works we have diligently pursued the object we had in view on behalf of our shareholders. You will observe we intend to take powers to issue first mortgage debenture stock for £100,000, and to issue £80,000 thereof at 5 per cent., repayable in three years. Any portion of this issue can be taken up by the shareholders if they apply before June 8th. And in reference to this point I should say that, looking at the eminently satisfactory nature of the securities for the stock, at the solid, substantial, and durable character of the works, the extensive appliances there for economical manufacture, and looking at the prospects of the company for the production and disposal of its products, I think the stock is likely to prove to shareholders who have money to invest a tempting offer. If, however, shareholders do not like to take up the stock it will be issued elsewhere; but I may say not a farthing of commission will be paid for the raising of this money if the shareholders do not themselves desire to take it up. Mention is made in the report as regards law suits. These have been undertaken to protect our patents from infringement. It would, however, not be prudent for me to enter largely into that question; suffice it to say that our position seems to be, in the opinion of the best experts of the law, and those whom we have consulted in the scientific world, impregnable. The directors feel that with the present rate of manufacture, and under the contracts we have for selling our product, and the difference between our cost and selling price, we are justified in holding out the probability of our paying at the end of September next, or in the month of October, profits realised at the rate of 8 per cent. per annum for the half-year which will then have elapsed. The Chairman concluded by moving the adoption of the report and accounts.

Sir HENRY E. ROSCOE seconded the motion.

Mr. DRYSDALE asked if there was more than one action which they had at law?

The CHAIRMAN said they had two patents, and an action had been taken in relation to both patents. These patents somewhat crossed each other, and they had found it necessary to defend both, so that they might settle the matter once for all. They had, however, only one opponent.

In answer to Mr. Lyall, the CHAIRMAN said the date of the action was not as yet fixed; but it was expected it would be down for hearing in July. They were entirely unaware of any works being owned by their opponents or even projected. They knew nothing of any steps being taken for the establishment of any such large industrial undertaking.

The resolution was then agreed to.

The retiring directors (Mr. Frank Hardcastle and Sir Henry E. Roscoe) were re-elected.

On the motion of Mr. J. S. PARKER, seconded by Mr. LYALL, the sum of £1,000 was voted to the directors as their remuneration for the past fifteen months, and it was agreed that in future the remuneration should be £1,000 per annum.

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The expansion of the publishing, book and stationery industry in Canada is, to some extent, indicated by the enlargement, refitting and rebuilding of the W. J. Gage and Co., Limited's, warehouse, on Front-street, Toronto. The changes now in progress will more than double the space and capacity of the manufacturing and selling facilities of the company. Having acquired the warehouse next door, formerly occupied by Messrs. Nelson, the Gage Co. is building an extension back to Piper-street. The rest of the establishment is being thoroughly rearranged and refitted, and the company believes it will have the most extensive and complete book and stationery manufactory and warehouses in the country.

When all arrangements are concluded, the first floor will be given over to the sample room and the public offices, with Mr. Gundy's private office. A new staircase, on the west side, will lead up to the stationery department on the second floor. A door will communicate with the book department, alongside, in front of which will be the private offices, those of Mr. Gage and Mr. Spence. Above the book department will be the envelope factory, and next it the flat writing papers and envelope stock. On the fourth floor will be, as before, the bindery, which is being extended back to the newly acquired building on Piper-street. On the fourth floor of the new Front-street warehouse the paper for manufacturing purposes is kept, while the publishing of school books is carried on in the Piper-street building. Next to this, on the same street, is being erected an entirely new building, in which will be the press-room and printing machinery (the company do no job work). Electricity provides power for the whole establishment. In the large basement are stored many tons of paper, including that made in the Royal Mills.

The shipping-room is being extended and a more convenient arrangement in this respect made. In fact, the whole establishment is being equipped and remodelled in a systematic manner. In point of light, space and facilities the new buildings will leave little to be desired.

FRENCH GOODS IN MONTENEGRO.—Direct steam communication has lately been established between Marseilles and Antivari, and as a consequence it is now proposed to establish at the latter port a depôt for the sale of French articles, which, it appears, meet with a strong demand at the Montenegrin capital, Cettinje. Amongst the goods most liked are cigarette papers, fancy wares, writing papers, pens, and purses.

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5		[illegible]	
10		[illegible]	
31		[illegible]	
13		[illegible]	
10		[illegible]	
5		[illegible]	
1		[illegible]	
25		[illegible]	
6		[illegible]	
6		[illegible]	
17		[illegible]	
20		[illegible]	
1	Hamburg	[illegible]	
25		[illegible]	Philadelphia
11	Hull	[illegible]	New York
2		[illegible]	
5	Havre	[illegible]	
3	Liverpool	[illegible]	
3		[illegible]	
3		[illegible]	
17		[illegible]	
3		[illegible]	
1		[illegible]	
10		[illegible]	
18		[illegible]	Philadelphia
3	London	[illegible]	New York
1	cases	[illegible]	Boston
5	cases	Rotterdam	[illegible]	New York
16			[illegible]	
15			[illegible]	
5			[illegible]	
100	cases		[illegible]	
17	cases		Jansen Bergmann	

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7	bales	Antwerp	Castle and Gerhard	New York
11			Saemon and Co	
100			Train, Smith and Co	Boston
200			Butterworth & Co	
103	bales	Aberdeen	Train, Smith and Co	
18			[illegible]	
246		Copenhagen	Saemon and Co	New York
74	bales	Dundee	Jessup and Moore	
277			Train, Smith & Co	
184			Butterworth and Co	
40			[illegible]	
25		Hamburg	Salomon Bros	
22		London	Train, Smith & Co	
51			Butterworth and Co	
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77			[illegible]	
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515				
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3			Butterworth and Co	
185			Train, Smith & Co	
184			Butterworth and Co	
230		London	Train, Smith and Co	
175			Tessier, Bertrand	
70			Butterworth and Co	
3			Dittes and Co	
18			Hill and Cutler	
10			A. Zatzenstein	New York
15			Castle & Gerhard	
104			Train, Smith and Co	
12			Lawrason and Co	
12			Jarmuth & Scott	
108			N. Y. Shipping Co	
244		Rotterdam	Jessup and Moore	
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Commercial Intelligence.

Re LICENSED TRADES PROTECTORATE, Ltd.

A Trade Publication.

Under a compulsory winding-in order made against this company recently, the statutory meetings of the creditors and shareholders were held last week at the Carey-street offices of the Board of Trade, Lincoln's-inn-fields, W.C., Mr. A. S. Cooke, assistant receiver, reported that the statement of affairs had not been lodged and as the books had not yet been investigated the information in the possession of the official receiver was somewhat limited in extent. The company was registered in January, 1892, with a capital of £25,000 divided into £10 shares, and was formed, amongst other purposes, to purchase the *Licensed Victuallers' Gazette*. The promoter was Mr. A. Weeks, who was assisted by Mr. G. Garland and Mr. A. Morrell. No prospectus was issued and the company might in one sense be styled a private company, because it appeared that Mr. Weeks was not only the promoter but the real vendor, a director, the managing director and the chairman of the board. The other directors were his nominees, and it was believed that he provided their qualification shares. It was agreed that he should receive a salary of £1,200 a year as managing director of the company. In all 1,400 £10 shares were issued as follows:—[illegible] To Mr. Weeks for cash, 140; to the same gentleman as fully paid under a contract entered into August, 1894, [illegible] to the seven signatories, 7; and to Sir Raymond West for cash, 200. It appeared that the Assets and Debenture Securities Corporation agreed to acquire the *Licensed Victuallers' Gazette* from Mr. W. H. Bingham Cox for £15,500, payable as to £5,000 in cash on signing the contract, and the balance by instalments. The Assets and Debenture Securities Corporation assigned that agreement to Mr. John Dowell, a nominee of Mr. Weeks, and a second agreement was entered into under which Mr. Dowell undertook to sell the property to this company for £20,500, an ostensible profit of £5,000. This company apparently paid £5,000 on account of the purchase price, the money being provided by Dowell, probably through Weeks, and they executed a mortgage for £10,500. By that transaction the company became indebted to Dowell for £10,000, and they executed a mortgage over the property for £10,500, making up the total purchase price of £20,500. The transactions of the company were somewhat complicated, and subsequently became strictly matters [illegible] account between the company and Weeks. The latter found money [illegible] time to time, and it was the [illegible]ion for him to pay off that [illegible]age of £10,500 and take the place of the mortgagee, in consideration of which he was to have debentures and shares of the company. The mortgage appeared to have been paid off and money at different times advanced by Mr. Weeks, and in August, 1894, a general settlement was come to between him and the company, under which he accepted £4,000 debentures and £6,530 fully-paid shares in full discharge of all claims up to that date. Some time or other there was a reduction in the purchase price of the paper. The official receiver believed it was represented originally that the profits were £5,000 per annum, but it was afterwards discovered that they only amounted to £3,000, and a reduction of £5,000 was made in the purchase money. He did not know who got the benefit of that reduction, but the liquidator would have to investigate fully the circumstances attaching to the August, 1894, agreement, because it was upon that document that the £4,000 debentures and £6,530 shares were issued. Other debentures had also been given, making the total issue £10,000, and under a debenture action recently commenced, a receiver had entered into possession of all the property of the company. The paper had been sold for £9,500, and the other assets were book debts, valued at £2,500, and cash in hand £600, making a total of £11,600. Against that sum had to be deducted £10,000 for debentures, and £300 interest thereon, leaving £1,300 available for the costs of the debenture action and this liquidation, and to meet the claims of the unsecured creditors, returned at £1,475. Of course those figures had to be taken as subject to the realisation of the book debts at the amount placed upon them. That was a short outline of the company's history, but the meeting would see that there were certain matters, especially the issue of the debentures over what was so absolutely a "one man" company, that called for a stringent investigation. The business of the meeting was to decide as to the appointment of a liquidator and committee of inspection. Mr. Weeks intimated that if the receiver in possession for the debenture holders was appointed to the post of liquidator, an arrangement would doubtless be made for payment in full of the unsecured debts. He pointed out that, as the debentures had been in existence for six years, there could not be any question as to their validity, but it was the desire of the bondholders to save the creditors from any loss that might be sustained under the liquidation. After some discussion it was decided to adjourn the meeting until June 10th.

"THE PEOPLE'S GUIDE TO THE WORKMEN'S COMPENSATION ACT" is the title of a little penny booklet by Mr. R. M. Minton-Senhouse, LL.M., Barrister-at-Law. It is published by Messrs. Bemrose and Son, Old Bailey, E.C.

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A B..	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba.	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C..	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D..	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E..	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F..	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G..	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H..	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I..	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z..	210	82½	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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Abridged Patent Specifications.

4,578 (97).—**Improvements in Machines for Scoring Cardboard.** — CLARENCE WHITMAN HOBBS. Accepted 5th February, 1898.

Relates to that class of machines employed for scoring cardboard, used in manufacturing cardboard or strawboard boxes, which comprises two distinct sets of scoring mechanisms, arranged at right angles to each other. Each set consists of a table (or a portion of one, used in common for both sets of mechanism) over which the several sheets of cardboard are fed; a set of revolving cutters, each capable of adjustment to suit the dimensions or lines to be scored, placed above and adapted to score the upper side of the cardboard sheets as they pass beneath; and one or more rotatable rolls over which the cardboard passes, and so arranged that each set of cutters is situated above the axial line of a roll and presses upon the cardboard as it passes beneath the revolving cutters. After a sheet of cardboard has passed through the first set or scoring mechanism, it is fed at right angles to its former line of travel by an automatic feeding mechanism to the second set or scoring mechanism, there to be also scored at right angles to the line made by the first set.

23,611 (97).—**An Improved Machine for Folding Paper Bags, and the like, having Square Bottoms.**—FRIEDRICH HESSER. Accepted 12th February, 1898.

The machine, according to this invention, comprises two plates moving horizontally to and from each other, with pressers belonging thereto, also moving in a similar way; two blades also moving to and fro horizontally, but at an angle of 90 degrees to the plates; and finally a stamp descending vertically on to the plates; whereby, after the bag to be folded has been fitted with its bottom upwards over the plates, the latter move apart, draw the bag taut and grip it between them and the pressers, and then together with these pressers and the blades move towards the central longitudinal axis of the bag, whilst the stamp simultaneously descends in this longitudinal axis, by which means the bag is folded in by the blades on two opposite sides, and the bottom of the bag then flattened by the stamp, so that the bottom may be laid sideways flat on the bag, and thus the latter be given a flat level form to allow of its being easily piled and packed.

28,194 (97).—**Improvements in Book or Paper Trimming Machines.**—THE SEYBOLD MACHINE COMPANY. Accepted 12th February, 1898.

Relates to machines for trimming the edges of bundles of paper, such as books, pamphlets, circulars, posters, and the like. The principal features of the invention consist in the entire reorganisation of such machines, whereby two of the edges of the bundles of paper may be simultaneously trimmed, thus necessitating but a single turn of the bundles to bring all the uncut edges within the stroke of the knives. This is accomplished by that certain novel construction and arrangement of parts, thus enabling the employment of two cutting knives acting automatically and simultaneously in planes parallel to each other to trim two edges at a time, and in which a gauge is provided for the adjustment of the bundles of paper in the exact position required, arranged to automatically move out of the way as the clamp plates carrying the books or pamphlets are turned to bring the remaining uncut edges within the stroke of the knives.

Company Registrations.

"PENRITH and DISTRICT TIMES" PUBLISHING CO.

Registered with a capital of £5,000 in £5 shares, to adopt a certain agreement with John Thompson and to acquire, print, publish and carry on *The Cumberland and Westmoreland Advertiser and Lake District Chronicle.* The subscribers are:—Tom Lamonby, Penrith, solicitor; Thos. E. Little, Penrith, solicitor; W. H. Hudson, Penrith, stockbroker; Jos. Cowper, Penrith, chemist; Jos. S. Yeates, Penrith, watchmaker; Jos. Dixon, Penrith, plumber; Reuben T. Parker, Penrith, clerk. The number of directors is not to be less than 5 nor more than 7; the first are Chas. N. Arnison, Tom Lamonby, W. J. Reskett, John Thornborrow, Tom Birkett, Herman Harkowitz, and John S. Rigg; qualification, £100; remuneration, £20 each per annum.

VINCENT BROOKS, DAY and SON, Ltd.

Registered with a capital of £10,000, in £1 shares, to adopt a certain agreement for the acquisition of the business of general printers and publishers as now carried on at 48, Parker-street, W.C., and to develop and extend the same. The directors are F. G. Bowen, H. Fletcher, A. V. Hunt, and O. A. Fry. Qualification, £100. Remuneration, £2 2s. each for each board attendance.

HARMSWORTH MAGAZINE, Ltd.

Registered with a capital of £20,000, in £1 shares, to carry on the general business of printers and publishers. Registered without articles of association.

YOUNG BROTHERS, Ltd.

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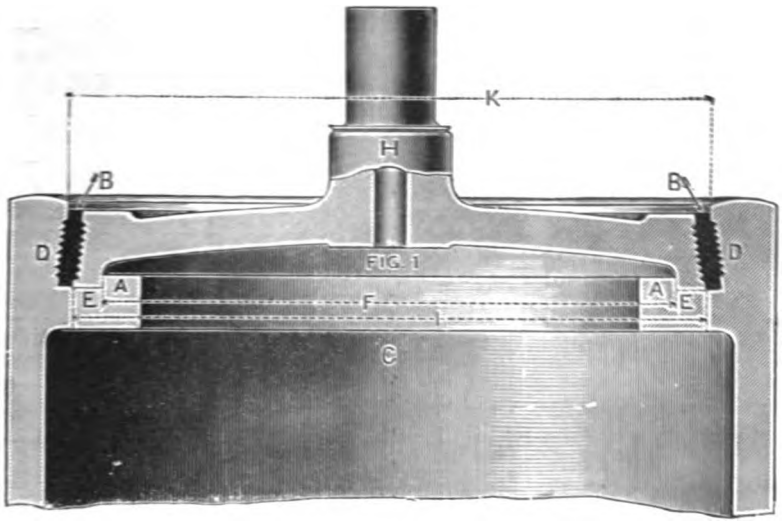
ESTABLISHED 1845 **EDINBURGH.**



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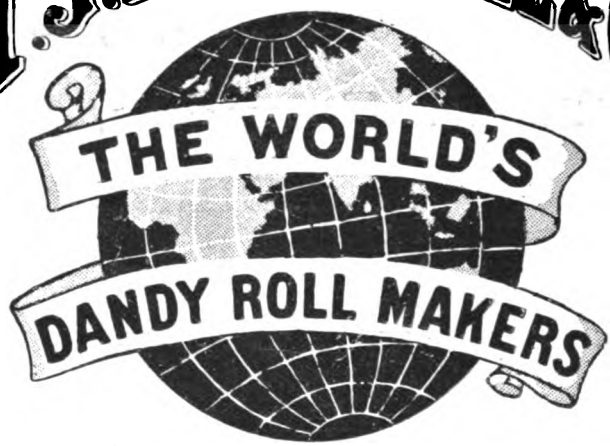

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VOL. XXIX. No. 23. LONDON: JUNE 10, 1898. EVERY FRIDAY. PRICE SIXPENCE.

The Estimation of Caustic Alkali.

An interesting contribution to the methods of estimating caustic and carbonated alkali has been published in the *Zeit. f. Angw. Chemie.*, by Messrs. P. Dobriner and W. Schrauz, who state that two methods may be used for the estimation of the hydrate. The alkalinity may be determined before and after the elimination of the carbonate by chloride of barium, or the total alkalinity may be determined at the same time as the carbonic acid. In a series of comparative experiments we found that, according to the first method, the proportion of carbonate of soda present appeared to be from 1 to 2 per cent. higher than the actual amount, and, naturally, the proportion of caustic soda would appear to be lower by the same quantity. We have shown that this error is due to the use of toughened folded filter-papers, for filtering the alkaline solutions treated by chloride of barium. These papers appear to absorb notable quantities of alkali. But if we use ordinary filter-papers this error disappears, and the two methods give concordant results. It is best to let the precipitated carbonate of baryta settle thoroughly, and to use a definite known quantity of the clear liquid for the determination of the caustic alkali. Results of sufficient accuracy can be obtained by the following method:—

To 2·65 grms. of caustic soda dissolved in 50 cc. of water, add phenolphthalein, and titrate with normal sulphuric acid until the red colour disappears. Then add 3 cc. more of the normal acid, and boil for five minutes to drive off the carbonic acid; then titrate the excess of acid by normal soda.

If a be the number of cc. of normal acid used in the first titration, and b the number of cc. of normal soda used in the second titration (after driving off the carbonic acid), then the proportion of caustic soda present will be 2 $(2a-b)$ per cent. Na_2CO_3, corresponding to NaHO and 4 $(b-a)$ per cent. Na_2CO_3.

It is well known that this method is based on the fact that, in the first titration, the whole of the caustic alkali is neutralised, and half the carbonate transformed into bicarbonate. This reaction has served as the starting point for a large number of methods for the estimation of caustic alkalies in presence of the carbonate; but these methods only give exact results when the quantity of carbonate present is very small.

Lunge recommends titrating first with phenolphthalein as indicator, until decolouration takes place, and then to continue with methyl-orange as indicator. Those chemists who do not like the use of methyl-orange as an indicator will find the method we propose very convenient.

Waxed Paper.

Waxed paper is useful for many purposes. The usual form of producing such paper is to saturate sheets of paper with wax by the aid of heat; a pile of sheets is made and hot melted wax dropped on the top one and then a hot iron passed over same, whence the heat drives the wax through the sheet below. A much better plan, however, is to dissolve paraffin or stearine in benzine, steep the paper in the fluid, and hang up to dry, when the wax will be left in the fibre of the paper as the benzine evaporates.

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British Imports of Foreign Paper.

UNPRINTED.

COUNTRY.	MAY.			JAN.-MAY.		
	1896.	1897.	1898.	1896.	1897.	1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Sweden	41,733	39,282	39,215	194,650	201,754	206,279
Germany...	34,288	46,007	26,663	200,062	202,267	152,340
Holland	39,677	39,076	36,321	231,790	221,208	195,206
Belgium	20,444	19,735	17,586	89,101	103,243	97,442
Various	53,713	115,848	101,522	266,530	438,748	574,806
TOTALS	189,855	259,948	221,337	992,142	1,167,210	1,226,073
VALUE.	£	£	£	£	£	£
Sweden	31,876	28,899	29,209	151,151	143,047	151,993
Germany...	32,455	43,049	25,760	184,500	193,325	139,194
Holland	31,158	33,710	33,100	174,706	178,900	177,937
Belgium	24,892	23,415	21,272	126,457	121,673	122,423
Various	62,712	89,303	80,335	297,837	365,447	454,309
TOTALS	£183,093	£218,376	£191,676	£934,654	£1,002,392	£1,045,856

PRINTED.

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
Germany...	691	857	877	4,337	3,773	6,022
Holland	1,121	1,587	844	7,324	7,628	5,678
Belgium	2,481	4,516	2,178	15,464	18,669	12,570
France	648	1,162	912	3,925	5,093	4,698
Various	516	1,105	2,199	4,336	5,770	11,101
TOTALS	5,457	9,227	7,010	35,386	40,933	40,069
VALUE.	£	£	£	£	£	£
Germany...	2,412	2,701	2,586	13,196	11,599	15,098
Holland	5,118	4,470	4,381	27,772	24,584	24,510
Belgium	6,593	12,365	5,037	42,309	51,956	34,539
France	4,392	5,775	4,285	22,984	27,807	23,204
Various	1,662	2,935	4,959	13,054	14,800	25,106
TOTALS	£20,177	£28,246	£21,248	£119,315	£130,746	£122,457

STRAW, MILL, & WOOD PULP BOARDS.

Quantity—cwts. ...	98,787	130,188	173,436	571,314	658,160	746,793
Value	£35,644	£48,435	£63,280	£202,739	£233,708	£278,240

TOTALS.

May	1898	401,783 cwts	£276,204	Jan.-May	1898	2,012,935 cwts	£1,446,553
,,	1897	399,363 ,,	295,057	,,	1897	1,866,903 ,,	1,366,846
,,	1896	294,099 ,,	238,914	,,	1896	1,598,842 ,,	1,256,708

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IMPORTANT.—If applied over old paint or whitewash see that all loose particles are carefully removed, as it **must** have a **firm, dry** surface to adhere to. If allowed to stand over night, remove the skim coat from the top before using again.

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PRINTINGS AND WRITINGS.

COUNTRY.	MAY.			JAN.-MAY.		
	1896.	1897.	1898.	1896.	1897.	1898.
QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	3,884	3,380	3,120	21,203	16,251	17,082
U. States	1,420	1,229	807	4,909	5,868	4,603
S. Africa	6,726	7,653	5,761	30,803	31,614	24,303
E. Indies	5,457	5,636	6,637	28,987	24,683	30,387
Australasia... ...	32,680	28,927	31,110	147,065	150,073	143,733
B. N. America ...	1,558	2,890	1,287	7,705	8,593	4,709
Various	10,806	11,795	8,000	58,640	55,411	57,116
TOTALS ...	62,531	61,510	56,722	299,312	292,523	281,933
VALUE.	£	£	£	£	£	£
France	6,714	5,888	5,378	34,046	27,554	29,222
U. States...	2,781	2,156	1,895	11,005	15,428	8,478
S. Africa	10,073	10,458	9,213	48,096	46,785	37,787
E. Indies	10,663	9,407	11,684	51,445	43,785	52,364
Australasia	30,329	32,655	37,401	181,639	181,400	167,804
B. N. America ...	2,758	4,073	2,022	13,132	13,536	8,588
Various	20,060	23,575	15,534	104,984	105,080	100,730
TOTALS	£92,378	£88,212	£83,128	£444,347	£433,568	£405,063

OTHER KINDS.

(Excluding Hangings).

QUANTITY.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.
France	622	550	873	4,836	4,072	4,307
U. States...	663	1,214	702	4,441	5,342	3,186
S. Africa	4,247	3,472	5,141	20,724	18,895	20,902
E. Indies	1,089	1,186	2,044	6,219	6,229	10,142
Australasia	11,972	9,874	7,666	46,645	46,090	35,227
B. N. America ...	367	395	239	1,764	1,480	1,576
Various	4,284	5,135	4,411	19,536	22,951	22,381
TOTALS	23,244	22,106	21,076	104,165	105,059	97,721
VALUE.	£	£	£	£	£	£
France	2,705	2,007	2,765	15,958	14,782	13,558
U. States	2,780	4,201	2,874	17,022	18,840	10,588
S. Africa	3,700	3,525	4,561	19,892	18,237	19,119
E. Indies	1,829	2,205	2,569	9,517	8,068	11,983
Australasia... ...	10,313	8,332	6,605	42,535	41,151	32,763
B. N. America ...	903	878	542	4,263	3,111	3,604
Various	8,011	7,982	7,598	37,098	38,157	37,710
TOTALS ...	£30,301	£29,130	£27,514	£146,285	£142,946	£129,325

TOTALS *(Including Hangings)*:

May,	1898	83,800 cwts	£124,781	Jan.-May	1898	416,729 cwts	£626,045
,,	1897	89,424 ,,	130,383	,,	1897	433,505 ,,	661,740
,,	1896	92,512 ,,	137,530	,,	1896	439,949 ,,	675,038

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GUARANTEED 58 DEGREES,

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Evolution of Digesters.*

By Martin Griffin.

(*Continued.*)

As indicated in the early part of this paper, the unequal expansion between iron and lead was destined to be one of two great obstacles in the use of lead for lining. The expansion of the latter and the failure to contract soon caused the sheet lining to buckle and crack and require constant repairs. This is what happened in the case of Francke's and Ekman's boilers. As soon as this became apparent a great variety of ways of attaching the sheet lead to the iron were devised. The second obstacle to the use of lead lining for any length of time was due to the fact that in the process of burning brimstone for making the solution of sulphites, a small amount of sulphides of calcium or magnesium is produced from reducing impurities in the brimstone. Also that there are conditions in the process of cooking favourable to the reduction by the organic matter of a small promotion of sulphites to sulphides of the alkaline base.

The result of this action is that at first there is only a slight blackening of the surface of the lead, which would have no significance except to the experienced observer. In time the lead will show signs of crystallisation, and on such places we shall a little later observe black scabs, which are composed of sulphites and sulphides of lime and lead. These in turn appear to have a very bad effect, for if we remove these scabs we shall find the lead pitted. The scabs may be scraped off, and the defective places chipped out and the holes burned up. Besides digesters lined with bricks and lead, bronze digesters were used to a considerable extent.

After this introduction to the three classes of digesters, let us follow the history of each. The Ekman and Francke digesters were never used in this country, and we pass on to some of their successors. The Partington digester ran its course from about 1885 to 1890, and was principally used in England and this country. As originally constructed, it was spherical in shape, about 12 feet in diameter, and mounted on trunnions for ease in filling, emptying, and circulating the cooking acid. The lead lining was applied in spherical lunes, clamped into the iron, and edges burned to each other. The theory was that it would be an easy matter to replace an injured section, and thus to keep the lining intact at comparatively small cost. The shell was perforated in many places to locate leaks in the lining. The result of this clamping was an expansion and buckling between the clamps and final fissuring of the sheets. The repairs of these digesters were great; add to this the time shut down for repairs, we see that the process was costly.

The Ritter-Kellner digester, though a little out of chronological order, should be described in connection with the Partington, as the right to use the two processes in the United States and Canada had been purchased by one company, and the two kinds were at several places installed in the same mill. At first we saw that the production of the fibre was the object sought; now we are fully launched in the struggle to improve the digester linings. The Ritter-Kellner digester was cylindrical, vertical, and stationary, about 10 feet by 28 feet high, built up of cylindrical sections 4 feet wide, a few inches apart, and fastened by heavy exterior bands. The object of this construction was to provide the means for attaching the lead lining peculiar to the process. The spaces between these sections formed annular dovetail mortises. These mortises are filled with an alloy of lead and antimony, and at the ends of a diameter meet similar vertical tenons, to which they are attached. The sheet lining is burned fast to this semi-cylindrical frame. The specific object of this arrangement, as stated by the patentees, was to make the lead lining of the digester durable by providing an arrangement for securing the lining to the casing of the boiler in such a manner that the creeping effect of the soft metal is localised, and hence more durable. To further secure the result, hard lead rivets might be used, though I have never seen them so used in this country. The shell was also provided with leak locating holes.

Manufacturers are now in the midst of the struggle to bind fast the recalcitrant lead. The second obstacle to its permanent use, previously referred to, has not as yet appeared; when they have fairly accomplished the work of forcibly holding the lead in place, it will appear. We see the advance made by Rittner-Kellner over Partington in the mechanical method of binding the lining. The cooking was accomplished in each case by the direct admission of steam into the mass.

These digesters were certainly more successful than the Partington; but the means, though vigorous and powerful, were as yet inadequate to hold fast the lining, which still buckled and cracked, though over smaller areas. A new phenomenon now appears. The digester, being vertical and stationary, the expansion of the lining is downward, in consequence of its weight; the upper parts become thin, and give way. This, of course, could not happen with a revolving digester.

In 1884, Chas. S. Wheelwright, engaged in the manufacture of sulphite pulp and paper in the city of Providence, R. I., patented an improvement in paper pulp digesters for sulphite, which were built having double walls of rolled iron, made in sections, and united section to section and wall to wall by rings. "A suitable metallic lining (preferably of copper) is to be placed on the inside of the inner shell."

The cooking was accomplished by admitting steam into the annular spaces between the outer and inner shell. This construction proved very costly and unsatisfactory, and was followed by the following modification;

* A paper read by Mr. Martin Griffin before the New York Section of the Society of Chemical Industry (U.S.A.).

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the shell of the digester was constructed of annular sections of cast iron, having flanges, and these were bolted together. Each section was lined separately with sheet lead, and attached by flanging over the iron flanges. The object of this construction was to facilitate the repair work, as now no one hoped by mechanical means to hold the lead lining in place. Steam for cooking was admitted directly. Notwithstanding the high price of the pulp produced, the process was not a commercial success.

I have now detailed some of the early and typical methods for fastening the lead lining, and localising the expansive action. A great many other modifications for mechanically attaching the lead followed from year to year even as late as 1891, when it must have been apparent to the most superficial observer that only a waste of time and failure could result. It is needless to perpetuate them further.

There still remains one more chapter on lead lining to be told, and we are done with lead as the principal lining in sulphite digesters. This we will defer while we take up the digester of bronze, which I regret to say was not destined to rank with other works in bronze and become a lasting monument to posterity of the skill and scientific attainments of this age of paper-making. The age of bronze was brief, lasting only a few short years from about 1887 to 1893 or 1894 in this country. It would even now be forgotten except for the death and destruction caused by explosions. It was never seriously taken up, except by one man and one manufacturer of the digesters, though they were operated in some half-dozen places.

The difficulties of making large, homogeneous bronze castings were claimed to be obviated by a secret process. The digesters were stationary, upright cylinders, 7 feet in diameter and 22 feet high, made in sectional castings of this deoxidised bronze, with planed flanges, bolted together, and lead jointed in assembling. This alloy the designer assumed was sufficiently acid proof for the purpose without any protecting lining. Steam was admitted directly in cooking.

In a paper read, June 1889, before the American Society of Civil Engineers, by Major O. E. Michaelis, at that time in command of the Kennebec Arsenal, and myself, after an extended tour of investigation of sulphite processes, he says, in reference to copper tin alloys, they are "'Kittle cattle' all authorities agree in testifying to their sensitiveness. Fluctuations in temperature affect their strength, and their constant exhibition under active circumstances in the presence of sulphur compounds cannot fail to produce deleterious effects." The analysis of a piece of one of the deoxidised bronze digesters showed the following composition: Tin, 7·68 per cent.; copper, 91·28 per cent.; zinc, 0·89 per cent. The specific gravity was 8·5579; the computed gravity 8·76; while that of pure copper is 8·94. This indicates the difficulty in making perfect castings. From an examination of the castings, it was further evident to us that had they been perfect, it would have made little difference, for neither copper nor any alloy of it is proof against the action of sulphur acids.

The progress of the action of the acid sulphites on the interior of the digester was first to dissolve a film on the surface. This in turn was promptly reduced to the oxide and sulphide by the organic matter, forming a dirty, black scale, which increased in thickness until it became dislodged and contaminated the pulp. It was only a matter of time how long any digester would last, or how long it could be safely operated, as it was a very treacherous thing to inspect. Finally, after a few explosions, insurance companies would not insure them, and they were quickly abandoned. The manufacturer of the castings had previously abandoned his part of the work as a failure.

The argument employed to introduce the bronze digester was a very plausible one. The promoter declared that though there was some action on the metal, the digester was, nevertheless, as durable as an iron digester for soda pulp. He also offered to take back the old digester, and pay the market price of lake ingot copper. In this way, he claimed that his digester was the cheapest and most satisfactory of any on the market.

(To be continued.)

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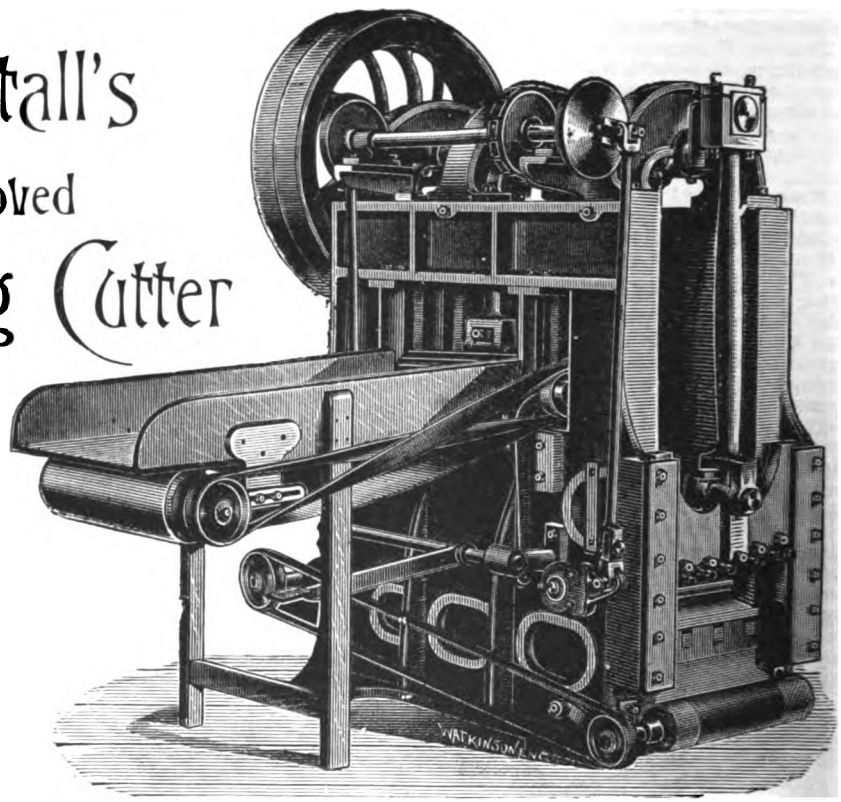

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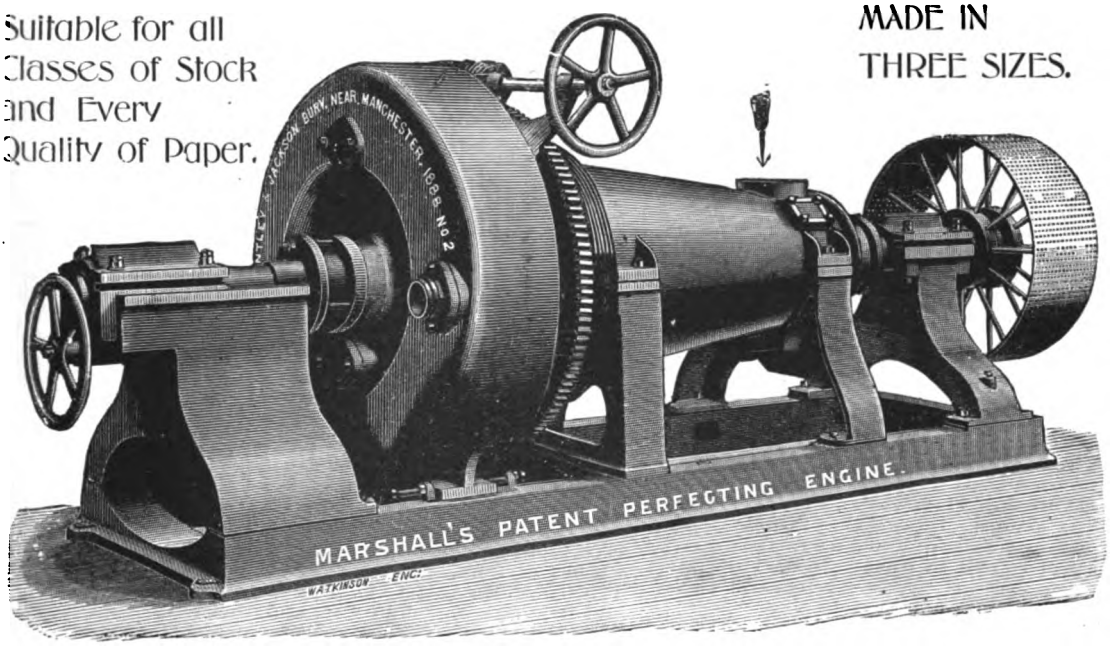

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Disastrous Fire at a Scottish Paper Mill.

Damage to the extent of between £5,000 and £6,000 was caused by a fire which broke out between four and five o'clock on Sunday morning in the Lochmill paperworks of Thomas Chalmers and Sons, Linlithgow. The machine-house, sale department, and mechanic shop were totally destroyed. The extensive buildings are situated on the outlet of Linlithgow Loch, to the north-west of the town. Two new engines erected about a month ago have suffered so much from the fire that it is doubtful whether they can be repaired to work again, and the paper machine, which was recently overhauled at considerable expense, is in a similar condition. Two years ago the firm introduced the electric light into the mill at a cost of over £400, and the cables in the destroyed departments have been rendered useless. The night watchman detected the fire in the machine-house shortly before five o'clock, but by that time it had got a firm hold of the place. He at once communicated with Mr. Thompson, the manager, whose residence is in close proximity to the works. Mr. Thomson was promptly on the scene, and at once summoned the Linlithgow Fire Brigade, which, under Captain Frame, was on the spot half an hour later, but at that time it was seen that no effort could save the machine-house, sale department, and mechanic shop, the roofs of which shortly thereafter falling in. There seemed a strong probability of the other departments—viz., the beating-house, the esparto-house, the esparto mill, with main steam engine and rag loft—being consumed but with a plentiful supply of water the firemen and most of the mill employees (the latter with the works steam pump and manual fire engine) were enabled to beat back the flames and save these places. The morning was mild, and it was undoubtedly owing to that circumstance that any of the buildings were saved. There was no fire in any of the departments that have been destroyed, and the night watchman is unable to account for the origin of the outbreak. At the earliest it will be three months before the ordinary work of the mill can be resumed, and a large number of workpeople will be thrown idle till then. The damage done by the fire is said to be covered by insurance.

Royal Paper Mills, Canada.

The works of the Royal Paper Mills Company at East Angus, Quebec, were visited recently by a large number of shareholders and others interested in such industries.

The new saw mill and pulp mill are both completed, the former having been got into ...on as early as last August, but the ...ll was started up only about a month ...hese stand on one side of the St. ... river; on the other is the paper mill. A bridge spans the river, w... feet wide at this point. The sl... suitable refuse from the saw-mill ... the pulp wood required for the ... Three carriers run from the saw-... pulp mill to deliver the waste. ... four large digesters in the diges... ing. The capacity of the pulp ... tons of dry pulp per day.

It is the intention of the comp... in another Yaryan evaporator, a... tary furnace, another digester, ... machine, which will bring the capac... the mill up to about 20 tons per ... capacity of the paper mill is 15 tons ... per day. "News" is not produce... dle grade book and writing pap... It has two machines—both of Scotti... —one a 96 inch, the other an 88 inc... chine. Also on the first floor are tw... calenders, one made by Bertrams, th... by the Holyoke Machine Company, of ... oke, Mass.

The company has abundance of ... having 300 square miles of Governm... limits and 65,000 acres which it own... simple. All this is on the river ... mills. The authorised capital of t... pany is 800,000 dols., of which 92,500 dols. ... subscribed and paid up. The charter auth... izes the issue of 400,000 dols. in first mortga... bonds, which amount is about to be issue... and offered at par. The bonds are payabl... in ten years, and bear 5 per cent. interes... payable quarterly.

American Envelopes.

A COMBINATION OF THE PRINCIPAL MANUFACTURERS.

A combination, under the title of the U.S. Envelope Co., is reported of ten of the largest envelope manufacturers in the United States.

The companies who are included in the combine are: The Holyoke Envelope Co., of Holyoke; the Morgan Envelope Co., the Springfield Envelope Co., and P. P. Kellogg and Co., of Springfield, Mass.; the National Envelope Co., of Milwaukee; the White, Corbin and Co., of Rockville, Conn.; the Whitcomb Envelope Co., the Logan, Swift, and Brigham Envelope Co., and the Wade H. Hill Envelope Co., of Worcester, and the Plimpton Manufacturing Co., of Hartford, Conn.

The combined output is estimated at 17,000,000 envelopes per day, representing about 90 per cent. of the envelopes manufactured in the United States.

The proposed capital is 7,000,000 dols.

BRITISH goods are preferred by buyers in the markets of Greece if they can be secured at prices approaching those charged for German, French, and other foreign goods; but British commercial travellers are almost unknown in that country, except at Athens.

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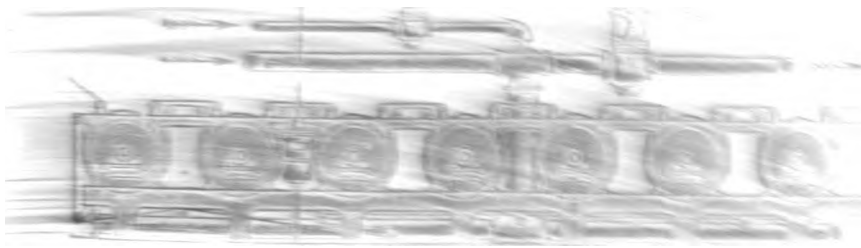

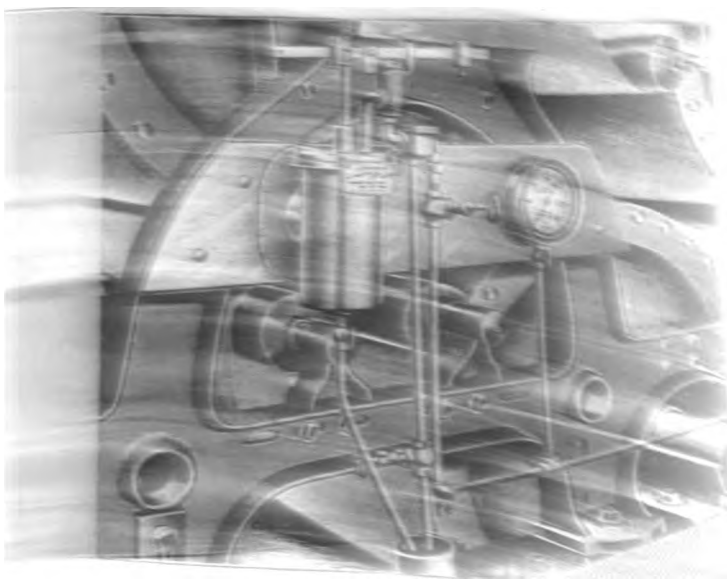

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Cellulose for Fabrics.

A patent has been issued for an invention which relates to the manufacture of thread or yarn for weaving purposes, or cord or twine from such short fibrous materials as cannot be readily spun by the ordinary process, and especially from such short fibres as cellulose.

In carrying out the invention the fibrous material is held in suspension in water in the proportion of from 300 to 500 parts of water to one of fibrous material, and in the use of cellulose excellent results are obtained with three parts of cellulose held in suspension in about 1,000 parts of water. The fibrous material so held in suspension is next taken up by or deposited upon a foraminous cylinder in the form of a web, which is next rolled or rubbed into a roving suitable for spinning. The thickness of the roving thus obtained may in practice be readily varied within certain limits by regulating the thickness and width of the web to be rubbed or rolled into a roving.

In the manufacture of thread and the like from short fibres such as described, there may be mixed therewith longer fibres, either of vegetable or animal origin, as hair, cotton, flax, hemp, jute, ramie, esparto grass, or the like, either bleached or unbleached, dyed or in the natural state, fabrics woven from such thread or yarn being very soft, pliable, and strong, and can not only be washed but also printed upon.

The apparatus employed in the preparation of the fibrous material for spinning consists essentially of means for forming a web or sliver and means for rolling and rubbing such web or sliver into roving, such apparatus being shown in the accompanying drawings, in which Fig. 1 is a longitudinal sectional elevation, and Fig. 2 a cross sectional elevation, of a very simple construction of the apparatus. In Fig. 3, which is likewise a cross sectional elevation, there is shown a modified take-up and rubbing arrangement, in which the take-up device is constructed in the form of an endless belt so guided over pulleys that two belt portions are brought into contact with and made to cross each other for the purpose of rolling the fibrous material into a roving. Fig. 3ª is a fragmentary top plan view illustrating the arrangement of the take-up belt; and Figs. 4 and 5 show portions of the foraminous wire or endless apron having stopped off—*i.e.*, non-foraminous—portions dividing the same into foraminous bands for the simultaneous formation of a plurality of narrow webs or slivers.

Fig. 2

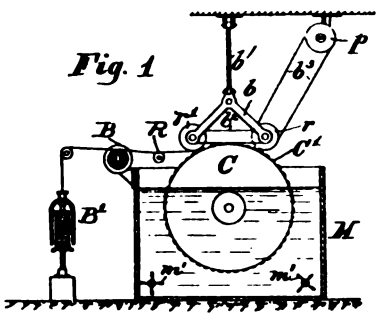
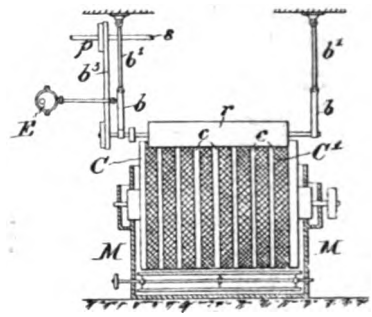


Fig. 1



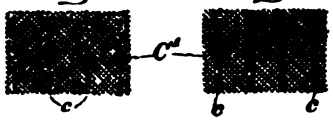


Fig. 4

Fig. 5

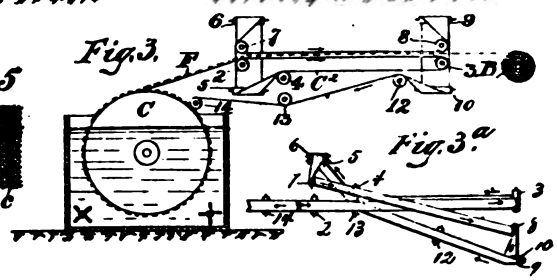


Fig. 3.

Fig. 3ª

Referring to Figs. 1 and 2, M indicates a vat containing the fibrous material held in suspension in water through the agency of two revoluble stirrers *m' m'* at opposite ends and near the bottom of such vat. The vat M is provided with bearings for the journals of a take-up cylinder C, clothed with a wire fabric C', divided into circular bands by means of non-foraminous or substantially non-foraminous strips c, or in other words, the wire C' has circular stopped-off places impermeable or substantially impermeable by water, so that the fibrous material will not be deposited thereon, whereby a number of webs or slivers are formed instantaneously on one and the same cylinder. As the cylin-

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der revolves, the web or webs or slivers of fibrous material are rubbed or rolled into a roving or rovings and caused to move over a suitable guide roll R to a winding roll B, on which the roving is wound, or instead of roll B, a second guide roll may be used and the roving wound directly on a bobbin B'.

The rubbing or rolling is effected preferably by two rolls r' r', journaled in the arms of V-shaped bearings b, pivoted to hanger rods b'. The two rolls r and r' are belted together by a belt b^2 and are revolved by a belt b^3, belted to a pulley on the shaft or journal of one of said rolls and to a driving pulley p on an overhead shaft s.

A reciprocating movement in the plane of the axis of rotation of the cylinder C, whereby the webs are rolled or rubbed into rovings, is imparted to the rolls r and r' by an eccentric E and suitable connections between its strap and the bearing b for one of the rolls, or in any other desired manner.

The rolls r and r' not only serve to roll or rub the slivers into roving, but also perform in a measure the function of couching rolls, and, as will be readily understood, the said slivers are made into rovings before they leave the wire. This may, however, be effected after such slivers leave the wire, as shown in Fig. 3, in which arrangement the wire cloth for the cylinder C consists of an endless foraminous belt or wire C^2 that nearly surrounds the said cylinder and travels therefrom in the direction of the arrows, first over guide rolls 2 and 3, then over guide roll 4 and under guide roll 5, which has its axis of rotation in a plane at right angles to that of rolls 2, 3, and 4. From roll 5 said wire travels over a parallel roll 6 and around rolls 7 and 8, which have their axis of rotation in planes that will cause that part of the wire guided thereby to cross the part of the wire travelling over rolls 2 and 3 at a more or less acute angle, as shown in Fig. 3^a, whereby the sliver or slivers of fibre F (shown in dotted lines in Fig. 3) is or are rolled into a roving and at the same time caused to move between the two wires to a reel or bobbin or bobbins B, suitably placed, on which such roving or rovings is or are wound. From the roll 8 the wire travels around the parallel rolls 9 and 10, thence alternately over and under the guide rolls 12, 13, and 14, whose axis of rotation are parallel with those of rolls 2 and 3, and back to cylinder C, proximate to the point at which the wire leaves said cylinder, as shown.

Of course a number of endless wires C^2 may be employed on the same cylinder and in conjunction with one and the same set of carrier and guide rolls, or a set of such can be used for each wire, which latter will be of such a width as to produce a sliver or web of the desired width.

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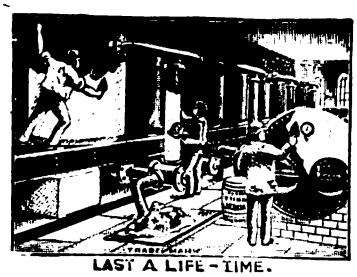

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TRADE NOTES.

THE DEATH OF MR. DANIEL BENTLEY.—It is with deep regret that we announce the death of Mr. Daniel Bentley, late of the firm of Messrs. Bentley and Jackson, Ltd., papermakers' engineers, Bury. He died on the 6th inst. at Buxton, in his 69th year. The funeral took place yesterday (Thursday) at Bury.

MR. JOHN LUKE, JUN., of Anchor Paper Mills, Denny, N.B., has taken into partnership Mr. David Macbeath, his cashier, and Mr. William Smith, his manager. The business in future will be carried on under the name of John Luke, Jun., and Co.

MR. WILLIAM JARDINE, of Penicuik, has recently returned from a visit to the United States.

BURY PAPERMAKING, ETC., COMPANY, LTD. (GIGG MILLS).—The result of the past half-year's working of the above-named company shows a gross profit of £4,343 11s. 8d. After deducting depreciation and interest, and adding the balance from last half-year, there is a disposable balance of £2,745 16s. 2d. From this it is proposed to pay 10 per cent. on the 10 per cent. preference shares, and 6 per cent. on the 6 per cent. preference shares and ordinary shares; £500 to be carried to reserve fund, and £538 12s. 9d. to next half-year's account.

THE CLOG SOLE AND WOOD FIBRE CO., LTD.—A petition for the winding-up of this company has been lodged by Mr. William Hall, of Bootle. The petition will be heard before the Court of Chancery of the County Palatine of Lancashire (Liverpool district), on Monday, the 13th of June.

CHESHIRE CHEMICAL TRADE.—The important award given in favour of Messrs. Bowman, Thompson and Company, Lostock Gralam, Northwich, will, it is authoritatively stated, lead to large additions to various portions of their works for processes outside the agreement. They have a project of great magnitude in contemplation.

DEATH OF MR. JOHN HAWORTH.—The death is announced of Mr. John Haworth, at the age of 74, at Ambleside, on the 4th inst. The deceased was one of the first connected with the North of Ireland Paper Mills Co., Ltd., Ballyclare, and was the founder of the Grove Chemical Co., Ltd., of which his son is now the managing director. He formerly resided at Oswaldtwistle, being a member of the firm of Haworth and Brook. The partnership was dissolved by effluxion of time. Mr. Haworth was a large shareholder in various paper mills and was widely known and greatly esteemed in the paper and allied trades. The interment took place yesterday (Thursday) at Southport cemetery.

THE STATIONERS' SOCIAL SOCIETY.—The annual dinner of this flourishing Society will be held at the Castle Hotel, East Moulsey, to-morrow (Saturday). Mr. Alderman and Sheriff Frank Green is announced to take the chair.

MR. HARRY RILEY, who for a considerable period has been cashier at Gigg Paper Mill, Bury, has been appointed secretary, and now holds the dual positions of secretary and cashier.

MESSRS. JOHN TURNBULL, JUN., AND SON, of Glasgow, advise us that they have opened a branch office in London, at 39, Victoria-street, Westminster, under the superintendance of Mr. Campbell Turnbull.

MR. H. L. ORRMAN, the agent for Norway, Sweden and Finland, for the Dayton Globe Iron Works Co., has recently left Stockholm for the United States. He has succeeded in obtaining several orders for the new American turbine.

MR. A. H. CHAPPELL, of 46, Queen Victoria-street, E.C., has been appointed sole agent for the Raths-Damnitz Cellulose and Papierfabrik of Stolp (Pomerania).

ESPARTO PAPERS IN FRANCE.—We have frequently commented upon the fact that very little paper is made from esparto in France. Notwithstanding the duty of 100 francs per ton, large quantities of esparto papers, however, are imported from the United Kingdom. The French evidently have very little or no experience in treating the raw material. A correspondent points out that an English or Scotch papermaker would be able to make the production of esparto papers a paying business in France, as the high import duty on the paper mentioned would be saved. Mr. A. L. Grondal, of 18, Rue Choron, Paris, directs our attention to the matter, and asks us to mention that he has for sale two mills especially suited for the purpose of producing paper from esparto pulp, the works being situated on the French coast of the Channel, with considerable hydraulic force for motive power. One mill is well adapted for manufacturing the pulp, and the other for turning it into paper.

PAPER FOR BUTCHERS' USE.—A correspondent, in referring to a recent article published in our pages on paper for butchers' use, points out that the effects of chromates and chrome salts on the system are very serious. A chemically-prepared paper for wrapping meat in would undoubtedly be generally condemned. The writer of the article suggested a waterproof paper, as used by buttermen; the paper is prepared by dipping it into a dilute solution of sulphuric acid for a few seconds, and then well rinsed with clean water. The paper becomes waterproof or like parchment.

THE PEAT INDUSTRIES SYNDICATE, LTD.—A meeting of the members of this company will be held on the 28th inst., at 15, Walbrook, London, when Mr. H. T. Underwood, the liquidator, will attend and give particulars as to the winding-up proceedings, etc.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

SCANDINAVIAN makers of both chemical and mechanical pulps report a firm market. Higher prices are reported to have been obtained in some cases. British buyers, however, are slow to do business.

WE have received the following communication, dated June 2nd, from Mr. William Spear, of the Victoria Hotel, Christiania:—"My attention has been called to a statement in your issue of the 27th ult., page 14, to the effect that the Water Powers and Industrial Estates Development Syndicate, Limited, have purchased the Follafos and Storfolden Estates in Norway, comprising an area of about 85 English square miles. As this statement is untrue and calculated to prevent or interfere with negotiations for the sale of the property in question, I should feel obliged by your publishing this contradiction in your next issue and stating whom your informant is."

WE must refer Mr. Spear to the Water Powers and Industrial Estates Development Syndicate, Limited, a company recently formed with a nominal capital of £25,500 privately subscribed or guaranteed. The registered offices are at 53, Victoria-street, London, S.W. In the prospectus brought under our notice we find that it is stated "this syndicate has been formed for the purpose of acquiring the valuable freehold properties known as the Follafos and Storfolden Estates."

THE vendor to the Water Powers and Industrial Estates Development Syndicate, Ltd., is Mr. Edwin Henry Hilton, who is also the promoter. He fixed the purchase money payable for the above-mentioned property at £12,500 cash, and £7,500 in ordinary shares and the founders' shares (500 of £1 each).

MAPS, plans, and surveys of the estates, the contract to purchase, original engineer's and expert's reports on the properties, draft contract with the Chemical and Mechanical Wood Pulp Co., Ltd., with plans of proposed mills, photographs of the estates, the articles and memorandum of association, together with all other documents, may be seen at the offices of the Syndicate, 53, Victoria-street, Westminster, S.W.

GREAT BRITAIN imported wood pulp during May to the extent of 29,830 tons of the value of £138,577. These figures show a considerable falling off compared with the corresponding month of last year, when 34,318 tons of the value of £181,689 were received.

CHEMICAL wood pulp was imported last month to the extent of 15,536 tons of the value of £98,175. Of this quantity 9,435 tons of the value of £53,308 represented the shipments from Norway and 6,101 tons of the value of £44,867 from other countries.

MECHANICAL wood pulp was received at British ports last month to the extent of 14,294 tons of the value of £40,402. From Norway 11,160 tons of the value of £28,556 were received, and from other countries 3,134 tons of the value of £11,846.

THE decline in the total imports of wood pulp is due to the falling off in supplies from "other countries." The total shipments from Norway last month were 20,595 tons, a falling off of only 325 tons compared with May last year. The total receipts from other countries last month were 9,235 tons, a decline of 4,163 tons compared with the corresponding month of 1897.

DURING the five months of the present year 152,254 tons of wood pulp, of the value of £723,166, were received at British ports. There is an increase in quantity but a decrease in value compared with the corresponding months of last year, when the figures were 148,447 tons of the value of £744,365.

THE imports of chemical wood pulp for the five months amount to 65,644 tons, of the value of £451,818. From Norway 37,188 tons, of the value of £234,326 were received, and from other countries 28,456 tons, of the value of £217,492.

MECHANICAL wood pulp was received during the five months to the extent of 86,610 tons, of the value of £271,348, representing 53,764 tons of the value of £138,064 from Norway, and 32,846 tons, of the value of £133,285, from other countries.

TAKING the five months' figures, wood pulp from Norway has not been so largely received during the present year as in 1897, the respective totals being 90,952 tons against 104,503 tons. The arrivals from other countries, on the other hand, show an increase, the totals being 61,302 tons against 43,944 tons.

THE recent arrival of several vessels loaded with sulphur at American ports has relieved the market to some extent, and prices have receded somewhat, New York quotations being 24 dols. to 30 dols.

THE product of the Burgess Sulphite Fibre Co., of Berlin, N.H., U.S.A., is not unknown on the British market. The mill is said to have a daily output of 200 tons.

THE WORLD'S PAPER TRADE REVIEW, the leading European exponent of the paper trade.—*American Paper Trade and Wood Pulp News.*

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Awards

STOCKHOLM.....1866. CHRISTIANIA.....1878.
PARIS.....1878. CHRISTIANIA.....1883.
FREDRIKSTADT...1885. COPENHAGEN.....1888.

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GERMANY.

THE NEWS TRADE. — According to a report issued by the Lower Bavarian Chamber of Commerce, prices obtained for news show a steady decline. The utmost economy in management has to be exercised in order to obtain a small profit, The prices charged for wood from the Royal Forests is considered too high, and supplies have had to be obtained from other sources. Fortunately low freights have been current. Manufacturers find it difficult to arrange for other than local sales owing to high railway rates.

THE *German Newspaper Catalogue* shows 3,406 daily and weekly publications. The circulation varies and is not even given in all cases, but it is probably not going too low when computing it at 12,000,000 copies a day.

AUSTRIA.

THE AUSTRIAN NEWSPAPER TAX.—As is well known, Austrian newspapers are specially taxed, and each copy of the paper has to bear the Government's stamp. This imposition, it is announced, will be abolished in December next, on the occasion of the fiftieth anniversary of the Emperor ascending the Throne. The suppression of this newspaper tax means a decrease in the State revenues of 2,800,000fl.. As a first result the small provincial papers will probably revive, larger sheets probably be issued, and, in short, the whole newspaper world in Austria be extended to the advantage of the papermaker, who will experience a much larger demand for "news." That the small sheets would be the greatest gainers is apparent from the fact that they often pay half of their income for the tax.

UNITED STATES.

MACHINE MINDERS ON STRIKE—Owing to an alleged grievance some half-dozen machine minders at one of the mills of the International Paper Co., at Bellows Falls Vt., have come out on strike.

THE INTERNATIONAL FIBRE CHAMOIS CO. —Judgment for 9,017 dols. has been entered against John C. McLauchlin, of No. 7, Beekman-street, New York, in favour of the Lincoln Paper Mills Company, for balance due on three notes of the International Fibre Chamois Company, of London, made at Quebec on February 8th, 1897, and which were endorsed by Mr. McLauchlin, who was the managing director of the company.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included the following:—To London, 3,955 packages and 124 cases; Liverpool, 92 packages; Hull, 20 packages; Dundee, 32 packages; Antwerp, 441 packages and 3 cases: Bremen, 22 rolls; Bremerhaven, 5 cases; Hamburg, 3 packages. Other shipments were:—To Argentine, 30 packages; B. W. Indies, 248 packages; Africa, 3 packages; Australasia, 1,342 packages; Japan, 4,904 packages; and Mexico, 617 packages.

THE "WORLD'S" ANTI-TRUST MILL.—The following item is taken from a New York paper:—"When Mr. Pulitzer first felt the pinch of the rise in price of paper, he published an announcement that he would invest a million dollars in any anti-trust paper company that might be formed. Many 'promoters' responded to Mr. Pulitzer's appeal, but they were all those irresponsible, but big talking gentlemen, and Mr. Pulitzer withdrew his offer. Since then, in fact since he has been abroad, men with capital and experience have communicated with Mr. Pulitzer, and as a result he will return and a new anti-trust paper mill will be built near Utica, which will be large enough to supply the *World* with all the paper it uses, and more. A prominent New York bank is interested in the venture, and work on the mill will be pushed night and day, and it is expected that it will be in operation within six months."

AMERICAN IMPORTS OF PAPER STOCK.—The imports of rags other than woollen during March amounted in value to 53,521 dollars, against 59,532 dollars for the corresponding month of last year. The imports of other materials during March amounted in value to 189,074 dollars against 234,695 dollars for the corresponding month of last year. During the nine months ended March rags were imported to the value of 530,155 dollars, and for the corresponding period last year 447,608 dollars. Other materials were received to the value of 1,630,899 dollars against 1,715,531 dollars.

"THE STRAND MAGAZINE" for June (summer double number) is most attractive, the contents being extremely interesting, and the illustrations bright and pleasing. Another thrilling contribution appears under the heading of "The Brotherhood of the Seven Kings," by L. T. Meade and Robert Eustace, and the lively "Adventures of Miss Cayley," are added to by Grant Allen, Conan Doyle has commenced a series of articles under the heading of "Round the Fire," the first being "The Story of the Beetle Hunter." W. W. Jacobs contributes the "Smoked Skipper," and amongst the remaining highly entertaining contents may be mentioned "The Queen as a Mountaineer," "An Interview with Jan Van Beers," "A Submarine Boat," "Postmen of the World," and "How Nelson Lost His Eye," the latter by Robert Barr.

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British Imports of Esparto.

There was a heavy falling off in the arrivals of esparto last month compared with the corresponding period of last year. The five months imports, however, show a slight increase. The following are the

TOTAL IMPORTS.

May	1898	9,620 tons	£37,832
,,	1897	19,356 ,,	75,914
,,	1896	9,625 ,,	40,939
Jan.-May	1898	95,143 tons	£359,192
,,	1897	92,709 ,,	378,314
,,	1896	85,755 ,,	365,552

The arrivals from Spain last month amounted to 3,418 tons, of the value of £17,359, compared with 6,108 tons, of the value of £29,878, for May, last year. The five months' imports amount to 24,996 tons, of the value of £122,546, against 30,956 tons, of the value of £153,933.

The receipts from Algeria last month reached 2,079 tons, of the value of £7,393, against 8,533 tons, of the value of £31,058. For the five months 38,437 tons, of the value of £134,680, were received, against 35,804 tons, of the value of £134,128.

Other countries supplied 4,123 tons, of the value of £13,080, last month, the figures for the corresponding period of last year being 4,715 tons, of the value of £14,978. Five months' imports: 31,710 tons, of the value of £101,966, against 25,949 tons, of the value of £90,253.

British Imports & Exports of Rags.

The figures relating to the imports of rags show a substantial decline compared with last year, whilst the exports show an improvement.

TOTAL IMPORTS.

May.	1898	1,667 tons	£15,690
,,	1897	2,912 ,,	26,232
,,	1896	1,893 ,,	19,050
Jan.-May,	1898	8,646 ,,	£83,620
,,	1897	11,471 ,,	112,950
,,	1896	9, 718 ,,	92,730

TOTAL EXPORTS.

May,	1898	5,526 tons	£27,562
	1897	4,451 ,,	26,589
,,	1896	4,943 ,,	20,085
Jan.-May,	1898	24,346 ,,	£118,812
,,	1897	20,969 ,,	116,179
,,	1896	22,850 ,,	119,092

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TO BE LET OR SOLD, IN FRANCE (La Manche).

TWO LARGE AND EXCELLENT FACTORIES,

One for Manufacturing ESPARTO PULP, being equipped with 40 H.P. Hydraulic and 30 H.P. Steam; the other a PAPER MILL, situate about 200 yards from a railway station, and connected with the sea by a Canal. The last named works has 100 H.P. Steam and 240 H.P. Hydraulic and contains an 84-inch Papermaking Machine.

Address for particulars to the Proprietor—

MONS. GRONDAL, 18, RUE CHORON, PARIS.

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The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

Established 1879.
Printed and Published EVERY FRIDAY by W. JOHN STONHILL, at 58, Shoe Lane, London, E.C.
Subscription £1 per annum, Post Free.

Representative for Lancashire and the North of England
MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, JUNE 10, 1898.

A Pernicious Custom.

THE custom of employees writing to firms supplying their employers with goods for funds to assist in defraying the expenses of an annual outing has so widely extended during recent years that we are not surprised that a cry is being raised against the habit, which, to say the least, is a most pernicious one. We have received the following communication from a firm of wood pulp merchants:—"We beg to draw your attention to a matter in the paper trade, which apparently threatens to become a regular custom and nuisance, viz., the applications from the paper mills' employees to the wood pulp sellers for donations to their outings, beanfeasts, etc. These applications are getting so frequent that soon hardly a week will go by without one or the other mill, or rather their employees, writing for such donations, and in many cases it is expressly stated that these applications are made with the assent of, or under the auspices of, the employers, so the latter apparently not only tolerate, but even encourage, this mode of exacting gifts or quasi-commissions from the sellers. We feel certain that you will share our opinion about this matter, and shall be glad if you think it worthy of some leading remarks in your *Review*, as the best medium of putting a possible stop to a nuisance." The system is by no means confined to the paper trade, but is quite general, and without doubt has tended to create a most demoralising effect. In the above communication it is stated that the employers are cognisant of, and even support, the applications made by their employees for donations, but we are inclined to believe that such cases are of an isolated nature—at least, it is to be hoped so. A rival firm, in wresting a new customer from a competitor, would, perhaps, be inclined to treat an application for a subscription in a liberal spirit, regarding the outlay in the light of a bribe, or, in more polite language, "a commission"; we all know that in a number of trades "palm oil" is the "open sesame" to many orders. We do not for one moment infer that the mischievous "tipping" system permeates the paper and pulp trades, nor do we believe that workers in paper mills are less honest than in other industries. Their request for a donation may be based upon straightforward principles, but the system certainly places the applicants—whoever they may be—in a very wrong light, and it is to be hoped that for the good of the paper trade, that this mode of extracting gifts will speedily become extinct. Some of the letters that have been brought to our notice have been couched in such terms as to almost amount to a demand, or else the recipient must be prepared to lose the custom of the firm mentioned on the memo used. Pleasuring under such conditions cannot be considered honest, as it means to the fair dealing a tax of no light nature, whilst to the unscrupulous it invariably represents a system of "robbing master to pay man." Only the other day we ourselves received a circular of this nature from a customer's business address, and as we omitted to reply to it as promptly as the sender considered proper, a collector called at our office a day or two later armed with a book and a good cheek to extract our mite.

* * *

Imports of Foreign Paper.

THE imports of foreign paper last month were not of so high a value as for the corresponding month of last year. This is owing to a falling off in the receipts of unprinted paper, due to a decline in the shipments of paper from the United States, where there has been a very large home demand owing to the greater consumption on account of the "extras" published containing war intelligence. The total value of the imports of paper last month was £276,204, and the sum for the corresponding month of last year was £295,057. The value of unprinted paper amounted to £191,676, against £218,376; printed paper, £21,248, against £28,246; strawboards, etc., £63,280, against £48,435. The total quantity imported last month, however, exceeds that for May, 1897, the figures being 401,783 cwts., against 399,363

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cwts. respectively. The increase is due to a larger importation of strawboards, etc. Reviewing the statistics for the five months a large increase is shown in the imports compared with last year, the figures being 2,012,935 cwts., of the value of £1,446,553, against 1,866,303 cwts., of the value of £1,366,846. The following comparative values relate to the imports of unprinted paper from the countries mentioned :—

	Jan.May, 1897.	Jan.May, 1898.	Increase or Decrease.
Sweden	£143,047	£151,993	+ £8,946
Germany... ...	193,325	139,194	- 54,131
Holland	178,900	177,937	- 963
Belgium	121,673	122,423	+ 750
Other Countries	365,447	454,309	+ 88,862
Totals ...	£1,002,392	£1,045,856	+ £43,164

Notwithstanding the falling off last month in the arrivals from "other countries," a substantial increase is shown during the present year. Sweden has also forged ahead, but Germany appears to be losing her hold of the market.

* * *

Exports of British Paper.

IT is a pity that we are gradually losing ground in the exportation of British paper. Last month's shipments amounted to 83,800 cwts., of the value of £124,781, whilst the figures for the corresponding month of last year reached 89,424 cwts., of the value of £130,383. There was a falling off in all classes of paper exported, except hangings. During the five months the exportation of British paper amounted to 416,729 cwts., of the value of £626,945, against 433,505 cwts., of the value of £661,740. The following values relate to all classes of paper (except hangings) exported to the countries mentioned :—

	Jan.-May, 1897.	Jan.-May, 1898.	Increase or Decrease.
France	£42,336	£42,780	+ £444
U.S.A.	34,268	19,066	— 15,202
S. Africa	65,022	56,906	— 8,116
E. Indies	52,453	64,347	+ 11,894
Australasia ...	222,551	200,657	— 21,894
B. N. America	16,647	12,192	— 4,455
Other Countries	143,237	138,440	— 4,797
Totals ...	£576,514	£534,388	— £42,126

The only important increase to be noted is in trade with B. E. Indies. There is a serious falling off in shipments to Australasia, and a substantial decline in trade with S. Africa and the United States.

Stocks and Shares.

The market for paper mill shares has not undergone very material change during the last fortnight, but the general tendency seems to be a falling one. Bergvik pref., Burnley, and North of Ireland, are fractionally easier with sellers prominent. East Lancashire bonus also are down ⅛, whilst a rise of ⅛ is noted in the ord. shares. Star are ¼ lower.

Among chemical shares, Brunner, Mond are quoted ex dividend now, and the ord. have declined ⅛ and the new ord. ¼. Bowman, Thompson pref. seem a selling market, and are quoted ⅛ lower. United Alkali pref. are 1/16 easier, but the ord. are to a like extent harder and deb. stock firm. Castner-Kellner continue to be active, and are 6d. higher, and Steiner pref. are firm at 11⅜ buyers. Business generally is quiet.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2120

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices June 8th.
10	10	Bath Paper Mill Co. (Ld.)	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	102—105
10	10	do. do. 6% pref.	6	12⅛—12¾
3⅛	5	Burnley Paper Co. (Ld.)	10	6—6½
7	7	Bury Paper, ord. ,,	6	6¼—6⅜
7	7	do. 6% pref.	6	7⅛—7⅜
2½	3	Collin (Darwen) Paper ,,	nil	⅛—⅜
5	5	Darwen Paper Mill Co. "A"	15	11½—12
3¾	5	do. do. "B"	15	9—9½
10	10	E. Lancashire Paper Co. Ld.	nil	8½—8⅝
10	10	do. do. 6% pref.	nil	8½—8⅝
5	5	do. do. bonus	nil	4⅛—4¼
100	100	Ekman Pulp & Paper Co. Ltd. debs.	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	6½—7
5	5	Hyde Paper Works Co. ,,	nil	1⅝—2
2½	5	Kelln'r-Part'g't'n P'p Co,,	12*	8—8⅛
5	5	do. do.	12*	14—14½
100	100	do. do. debs.	4½	106—108
4	5	N. of Ireland Paper Co. ,,	12½	8⅛—8½
7	10	Olive Brothers ,,	10	7—7½
1	1	Owen, T. & Co. 6% pref	6	26/6—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
100	100	do. do. debs.	5	112½—113½
5	5	Peebles (A. M.) & Son ,,	8½	7⅞—8
5	5	do. 5% cum. pref.	5	6½—6½
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	7—7½
1	1	do. do. cum. pref.	5	1⅛—1½
4½	5	Roach Bridge Paper Co. ,,	10	5⅜—5⅝
5	5	Star Paper Co.	10	8⅛—8½
3	5	do. do. cum. pref.	10	6⅛—6½
0	10	Waterlow & Sons non.-cum. def.	—	13⅞—14⅛
		do. do. non.-cum. pref.	4	13⅞—14⅛
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	6⅝—6⅞
10	10	do. do. cum. pref.	7	10⅛—10⅜
100	100	do. do. debs. (red. 1904)	6	105—107
10	10	Brunner, Mond & Co. (Ld.)	20	37½—37¾ x.d.
3⅛	10	do. do. "New" ,,	20	14⅝—15 x.d.
10	10	do. do. 7% pref. ,,	7	17⅛—17½ x.d.
5	10	do. do. do. new issue	7	8 1/16—8 3/16 x.d.
1	1	Castner-Kellner Alkali Co.	—	23/6—24/6
5	5	Clayton Aniline cum. pref.	6	5⅛—6
0	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅜—11⅝
	Stock	do. do. deb. stock (red. 1912).	4	105—107
10	10	United Alkali Co. ,,	2	2 1/16—2⅛
10	10	do. do. cum. pref.,,	7	8 1/16—9 1/16
100	Stock	do. mort. deb. (red. after 1902)	5	110—110½

* Interim.

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IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

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SUBSCRIPTION £1 per Annum, Post Free to all Countries

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Situations Vacant.

PAPER TRADE.—Wanted, an energetic and experienced Foreman to take charge of Cutting, Glazing, and Reeling Department. None but efficient men need apply.—John Wild and Sons, Radcliffe, near Manchester. 7286

PAPERMAKERS' TRAVELLER Wanted for London; a good all-round knowledge of papers and a good connection essential. None but first class men need apply, and application must be by letter only, in strict confidence, to A. M. Peebles and Son, Ltd., 153, Queen Victoria-street, E.C. 7302

WANTED at once, good Man for Supercalender. Must be steady, industrious and reliable, with good references. State wages.—Address, No. 7,293, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7293

Situations Wanted.

A BEATERMAN wants Situation as Beaterman or Working Foreman; used to Ropes and M.G. Browns, and all kinds shop papers; first class references from last place.—Wm. Rabjohns, Ethel House, Sheene-road, Bedminster, Bristol. 7301

MACHINEMAN seeks Situation, 13 years' experience in mills making E S. Writings and Printings. Good references as to character and ability. Address, No. 7 296, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7296

MANAGER wants Re-engagement; practical papermaker, any class; active and energetic; good references.—Address, No. 7,287, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, E.C. 7287

Machinery.

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WANTED, good second-hand Revolving Cutter, 72 inches to 80 inches wide; must be in good condition. State particulars and where to be seen.—Address, Fo. 7,299, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7299

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FACTORY SITES.—For Sale, Capital Sites, with extensive river frontage; convenient to the depots of five different lines of railway.—Apply, F. H. Cooke, Land Agent, Peterborough. 7300

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PAPER MILL FOR SALE.—Brown Paper Mill in Scotland, 64 inch machine, steam and water power.—Particulars on application to No. 69, Keith & Co., Advertising Agents, Edinburgh. 7303

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Names and Addresses under this Heading will be charged for at the rate of 50/- per annum (52 insertions) for each card of two lines or under. Each additional line £1 extra

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ARTESIAN WELLS.

ABUNDANT WATER SUPPLIES Co., apply to C. Isler and Co., Bear Lane, Southwark, S.E.

BATCHELOR, Richard D., Artesian and Consulting Well Engineers, 73, Queen Victoria Street London, E.C., and at Chatham.

ISLER, C. & Co., Bear Lane, Southwark London, S.E.

CHINA CLAY.

ROGERS, J. & Co., Truro, Cornwall.—Agents, W. G. Taylor and Co., Ltd., 83, Queen Victoria Street, London, E.C., and 44B, Lancaster Avenue, Manchester.

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COLOURS.

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HINSHELWOOD, Thomas & Co., The Glasgow Colour Works, Glasgow. Colours and shades matched exactly.

The VIA GELLIA PAINT & COLOUR Co., Matlock Bath. Colours in every variety. Samples and prices on application. Enquiries solicited.

GLUE, GELATINE, TUB SIZE, &c.

GROVE CHEMICAL Co., Ltd., Appley Bridge, near Wigan, Lancashire.

MINERAL WHITE or TERRA ALBA.

BELVOIR, Newark-upon-Trent.

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WINSER & Co., Kegworth Mills, near Derby, and 312, Deansgate, Manchester. Also importers of China Clay.

PULP and PAPER MILL EXPERTS.

C. D'OYLEY MEARS & Co., Wardrobe Chambers, Queen Victoria Street, London, E.C. Experienced Pulp Arbitrators.

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RAG, ROPE and METAL MERCHANTS.

CASTLE, Arthur, 113, Cannon Street Road, London, E.

RAGS.

CHALMERS, E. & Co., Ltd., Bonnington Leith.

MULLER, A. E., 9, Fenchurch Street, London, E.C.

SCHNURMANN, J., 148, Wool Exchange, London, E.C. Importer and Exporter of Paper Stock, Woollen Rags, Waste, etc.

STEEL.

MAKIN, Wm. & SONS, Sheffield. Established 1736. Roll Bars, Plates, Cutter Knives, Doctor Blades etc.

STRAW.

UNDERWOOD, E. & SON, Ltd., Brentford, London, W. Press-packed Oat, Wheat, or Rye Straw, delivered to the chief British ports or railway stations.

WOOD PULP.

ABBOTT & Co., Ltd., Ratcliff, London, E. Agents for the best makes Sulphite and Soda Pulps, also Mechanical.

ALSING & Co., Ltd., 110, Cannon Street, London, E.C. Agents for the well known "K.K." Soda Pulp; also Sulphite and Mechanical.

GRANT, W. & Co., 17, Baltic Street, Leith. Agents for best shippers, Sulphite and Sulphate, Mechanical, Pine, Brown, Aspen.

MULLER, A. E., 9, Fenchurch Street, London, E.C.

WERTHEIM, A. & Co., Hamburg.

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

3302	b	Newport N.	London	304	r	Boston	Liverpool
510	,,	Ghent	,,	244	,,	,,	,,
363	,,	Rotterdam	,,	2627	b	Rotterdam	,,
714	,,	,,	,,	2534	,,	,,	Manchester
488	,,	Amsterdam	,,	9775	,,	Leer	Leith
2539	,,	Rotterdam	,,				

WOOD PULP BOARDS.

340	b	Huelva	London	200	b	Hambro	Liverpool
250	,,	Hambro	,,	107	c	Drammen	,,
1100	,,	,,	,,	120	b	New York	,,
75	c	Christiania Grnguth		180	,,	Hambro	Goole
250	b	Helsingfors	Hull				

MILLBOARDS.

3988	b	Delfyzl	Goole	40	b	Gothenburg	Hull
4	,,	Copenhagen	Leith	9641	,,	Harlingen	,,
971	,,	Harlingen	Hull				

PASTEBOARDS.

54	b	Hambro	London	4151	b	Harlingen	Leith
121	,,	New York	,,	1520	,,	Trieste	,,
719	,,	Huelva	,,	107	,,	Amsterdam	,,
25	,,	Malmo	Grimsby	620	,,	New York	,,

b—bales. c—cases. r—rolls. cr—crater.

THE WORLD'S PAPER TRADE REVIEW.

Continental Opinion of the WORLD'S PAPER TRADE REVIEW: "I take this opportunity to speak out that your Journal has NO EQUAL of its kind in all countries.—I remain, yours faithfully, M. BEHREND. Prince Bismarck's Paper Mill, Varzin, Germany.

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	2953	687	1726
ARGENTINE	—	34	—
AFRICA	9	47	89
BELGIUM	—	17	61
B. GUIANA	—	35	10
CANADA	9	—	—
CAPE COLONY	343	65	40
CHINA	11	41	13
CHANNEL ISLES ...	—	—	6
DENMARK	—	28	72
EGYPT	—	10	—
FRANCE	21	52	20
GREECE	83	25	—
GERMANY	54	17	18
HOLLAND	20	24	—
ITALY	—	3	—
INDIA	158	503	289
JAPAN	—	4	—
NORWAY	—	32	—
NEWFOUNDLAND ...	—	—	3
NEW ZEALAND... ...	2379	399	387
PORTUGAL	37	—	22
RUSSIA	9	37	—
SPAIN	—	—	4
SWEDEN	—	6	—
S. AMERICA	—	63	—
U.S.A.	63	30	48
W. INDIES	—	—	23

FROM GLASGOW.

CANADA	—	107	17
INDIA	501	—	39
NORWAY	—	—	16
S. SETTLEMENTS ...	20	—	—
U.S.A.	6	—	30

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls
AUSTRIA	157	36	—
BELGIUM	2322	3	—
CANADA	288	7	—
DENMARK	16	—	—
FRANCE	858	24	—
FINLAND	64	—	40
GERMANY	4568	30	—
HOLLAND	27866	20	—
ITALY	62	—	—
NORWAY	2970	—	488
SPAIN	—	12	—
SWEDEN	4323	—	1104
U.S.A.	3650	85	553

Including the Following:—

uantity	From	Importer	Port
12 bales	Copenhagen	Morgan & Co	London
4 ,,	,,	Pucker & Co	,,
206 ,,	Gothenburg	Brown, Brough & Co	,,
235 ,,	,,	R. L. Lundgren	,,
11 ,,	,,	Cookson & Co	,,
1 34 ,,	,,	Schenkenwald & Co	,,
5 ,,	,,	Saunders & Son	,,
7 ,,	,,	Crabb & Co	,,
1 ,,	,,	F. Forward & Son	,,
153 ,,	,,	W. J. Jacob	,,
11 ,,	,,	E. Lloyd	,,
165 ,,	,,	J. Werstein & Co	,,
2 ,,	,,	Townson & Co	,,
280 ,,	Stockholm	J. Eberstein	,,
26 ,,	,,	J. Spicer & Son	,,
10 ,,	Trieste	Legham & Co	,,
109 ,,	,,	C. Pontello	,,
37 ,,	Venice	Peron & Co	,,

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Office of the WORLD'S PAPER TRADE REVIEW.
Telegrams: "[illegible], London." 58, Shoe Lane, London, E.C.

MARKET REPORT.

IMPORTS AND EXPORTS OF

All Classes of Paper Stock

at the Ports of

LONDON	HARROW	HARWICH	GRANTON
LIVERPOOL	GOOLE	DOVER	GRANGEMOUTH
MANCHESTER	GRIMSBY	FOLKESTONE	DUNDEE
RUNCORN	BRISTOL	GLASGOW	BONESS
FLEETWOOD	HULL	GREENOCK	Etc., Etc.
PRESTON	SOUTHAMPTON	LEITH	

For the Week ending Tuesday last.

FROM SPECIAL SOURCES AND TELEGRAMS.

CHEMICALS. The market continues quiet. ALKALI is firm, Ammonia, 58 per cent. being quoted at £4 5s., and Carbonated and Caustic £4 15s. BLEACHING POWDER is dull, soft wood being offered at £5 2s. 6d. to £5 5s. and hard wood £5 15s. to £6 f.o.b. CAUSTIC SODA is rather easier, 70 per cent. standing at £8 to £8 5s. SODA CRYSTALS are steady, and RECOVERED SULPHUR firm at £4 15s. to £5 per ton. SALT CAKE is offered at 25s. in bulk on rails. ALUM is without change, and BLANC FIXE easier. CHLORIDE OF BARIUM shows an advance of 2s. 6d. Foreign chemicals are without fluctuation.

[illegible]

Alkali, Ammonia, 58	f.o.b. Liverpool	£4	5	0
[illegible]	,, ,,	4	0	0
Aluminoferric [illegible]	,, ,,	3	5	0
[illegible]	,, ,,	3	15	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Oxalic Acid	f.o.b. Liverp'l 3½%	per lb.	3	
Salt Cake	on rail, in bulk	1	0	0
Sal Ammonia (1sts)	f.o.b. Liverpool	35	0	0
,, (2nds)	,, ,,	33	0	0
Soda Crystals	,, Tyne net	2	17	6
,, ...	ex ship Thames 2½%	2	17	6
,, ...	f.o.b. Liverpool 5%	3	0	0
Sulphur, rolls	f.a.s. works 2½%	6	5	0
,, flowers	,, ,, 2½%	7	5	0
,, recovered	,, ,, 2½%	5	0	0
Sulphate of Ammonia ...	,, ,, 2½%	9	10	0
,, Copper	,, Liverpool 5%	16	5	0

FOREIGN.—*F.o.b. Continental Ports:*

Hypo-Sulphite of Soda, 10-ton lots casks	4	10	0
Sulphate of Alumina, 7-8 cwt. casks net c.i.f. L'd'n	3	15	0
Blanc Fixe (c.i.f. London)	7	0	0
White Sugar of Lead	27	0	0
Zinc Oxide	19	5	0
Bleaching Powder	5	15	0

CHEMICAL WOOD PULPS.—The market is firm. Higher prices rule for both SULPHITE and SODA.

GREAT BRITAIN.

[illegible], East Coast, are [illegible] as follows:—

Sulphite, Unbleached, Common	£8 12 6	9 0 0
,, ,, Superior	9 5 0	9 10 0
,, Bleached	11 10 0	15 0 0
Soda, Unbleached, Common	8 5 0	8 10 0
,, ,, Extra	8 15 0	9 5 0
,, Bleached	10 10 0	12 0 0

SCANDINAVIA.

[illegible]	Kr. [illegible] — Kr. [illegible]
Sulphate, [illegible]	Kr. [illegible] — Kr. [illegible]

FRANCE.

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
Soda and Sulphate, [illegible]	[illegible]

UNITED STATES.

Sulphite [illegible]	[illegible]
Soda [illegible]	[illegible]

MECHANICAL WOOD PULPS.—[illegible]

stances we hear of an improvement of 1s. 6d. per ton.

GREAT BRITAIN.

Quotations, ex steamer, East Coast, are nominally as follows:

Aspen, dry			£6 10 0
Pine, dry	£4 8 9	—4 12	6
,, moist	2 5 0	—2 7	6
Brown, dry		4 15	0
,, moist		2 10	0

FRANCE.

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos. (2 cwt.).

Pine, 50% moisture, ordinary	Frs. 9.50—10.50
,, ,, fine	11 —12
,, dry, ordinary	10.50—11
,, ,, fine	11 —12
Aspen ,, fine	15 —16.50
Brown (half-chemical), 50% moisture	10.75—11.25
,, ,, dry	11.75—12.25

UNITED STATES.

F.o.b. Mill, nearest port (per 2,000 lbs.)... 13 dols.

IMPORTS OF WOOD PULP.

uantity	From	Importer	Port
600 bales	St. John's	Dominion Pulp Co	London
1562 ,,	,,		,,
54 ,,	Rotterdam		,,
750 ,,	Gothenburg		,,
102 brls.	Ghent		,,
572 bales	Christiania	Christophersen & Co	,,
1750 ,,	Fredrikshald		,,
4095 ,,	Stocka		,,
3 0 ,,	Ostend		,,
1868 ,,	Boston		,,
202 ,,	Gothenburg		,,
30 ,,	Skein	Johnsen and Jorgensen	,,
182 ,,	,,	W. G. Taylor & Co	,,
800 ,,	,,	J. Sharp	,,
250 ,,	,,	E. Anderson	,,
2500 ,,	Harnas		,,
2638 ,,	Skutskar		,,
70 brls.	Ghent		,,
4075 bales	Drammen		,,
3075 ,,	Carlshamn		,,
370 ,,	Antwerp		,,
200 ,,	Hambro		,,
25 ,,	Rotterdam		,,
102 ,,	Ghent		,,
609 ,,	Hambro		,,
135 ,,	Gothenburg	R. L. Lundgren	,,
28 ,,	,,	G. F. Green	,,
360 ,,	,,		,,
245 ,,	Ghent		,,
250 ,,	Oporto		,,
60 ,,	Halifax		Liverpool
154 ,,	Rotterdam		,,
138 ,,	Hango		Hull
2835 ,,	Christiania		,,
1760 ,,	Dronthelm		,,
337 ,,	Gothenberg		,,
409 ,,	Helsingfors		,,
509 ,,	Boston		,,
1079 ,,	Halifax		Manchester
1510 ,,	Halmstad		Preston
1877 ,,	Gothenburg		,,
2400 ,,	Trano		,,
1182 ,,	Levnvik		,,
44241 ,,	Skien		,,
804 ,,	Gothenburg		Granton
170 ,,	Skein		Dundee
255 ,,	Montreal		Bristol
179 ,,	Hamburg		Leith
52 ,,	Rotterdam		,,
3830 ,,	Christiania		Grangemouth

Totals of Wood Pulp from Each Country:

BELGIUM ...	1017 bales	HOLLAND ...	286 bales
,, ...	178 brls.	NORWAY ...	69146 ,,
CANADA ...	3506 bales	PORTUGAL...	250 ,,
FINLAND ...	547 ,,	SWEDEN ...	13579 ,,
GERMANY ...	988 ,,	U.S.A.	2377 ,,

STRAW PULPS. — Steady demand; prices well maintained.

Prices, c.i.f. London, Hull, or Leith:

German, dry, No. 1	£14 0 0
,, No. 2	13 0 0

ESPARTO.—There is only a small trade passing at prices which are firm and inclined to go higher. Offers of Spanish to a moderate extent for autumn delivery would meet with a ready response from buyers but sellers still refrain from quoting. African contracts can be obtained although merchants do not press for orders.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston, and Tyne Docks, are nominally as follows:

Spanish—	Fair to Good	£4 17 6—5 5 0
	Fine to Best	5 10 0—5 15 0
Oran—	Fair to Good	2 17 6—3 0 0
	First Quality	3 5 0—3 7 6
Tripoli—	Hand-Picked	3 2 6—3 5 0
	Fair Average	2 17 6—3 0 0
Bona and Philippeville		3 5 0—3 17 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
721 tons	Oran		London
340 ,,	,,	Morris and Co	Grangemouth
480 ,,	,,		Methil

HOME RAGS. — LONDON: Steady demand for most grades; stocks low.—BRISTOL: Fair amount of business doing; prices firm.—MANCHESTER: Steady business; prices unchanged. — SCOTLAND: Prices keep firm all round, and there is a good demand.—IRELAND: Market quiet.

LONDON.

N. White Cuttings ...	18/0-22/0	Canvas No. 1 ...	14/0-15/9
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London) ...	17/0-17/6	,, No. 3 ...	5/0
Outshots (selected)	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary)	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country ,,	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country ,, ...	2/0	Gunny	2/0-2/3

BRISTOL.

Fines	16/0	Clean Canvas ...	14/0
Outshots	9/6	Second ,, ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging ...	2/6	Tarred Manilla ...	6/0

MANCHESTER.

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares ...	2/6-3/0

EDINBURGH.

Superfines	15/0	W. Manilla Rope	7/0
Outshots	12/0	Tarred Manilla Rope ...	5/6
Mixed Fines ...	14/0	,, Hemp Rope	8/0
Common Seconds	7/0	Rope Ends (new)	6/0
First ,,	10/0	,, ,, (old)	4/0
Prints	5/0	Bagging	2/3
Canvas (best) ...	15/0	,, (clean) ...	3/0-4/0
,, 2nd ...	8/0		
Black Cottons ...	2/6		

GLASGOW.

Fines	12/6-16/0	Canvas No. 1 ...	15/0
Blues	4/6	,, No. 2 ...	10/0
Common Blues ...	3/3	Manilla Rope ...	8/0
Bagging	4/0	Tarred Hemp ...	

DUBLIN.

White Cuttings ...	16/0	Mill Bagging ...	2/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp ...	6/0
Light Prints ...	2/6	Rigging	10/0
Black ,, ...	1/6		

STRAW.—Prices:

Oat, c.i.f. London ...	£1 17 0	F.o.r. Goole ...	£1 17 6
Wheat ,, ,,	1 17 0	,, ...	1 17 0
Rye ,, ,,	2 10 6	,, ...	2 10 6

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FOREIGN RAGS.—The demand is rather quiet, except for French stock, which is in good demand for the British market. During the week some 123 bales of rag pulp were received at London from Rotterdam. The week's imports were as under:

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
42	Amsterdam	Hull	67	Ghent	Goole
262	Hambro	,,	23	Delfzyl	,,
47	Bremen	,,	20	Ghent	,,
277	Copenhagen	,,	58	Hambro	Grimsby
61	Bordeaux	,,	15	Rotterdam	,,
49	Amsterdam	,,	209	Dieppe	,,
118	Ghent	,,	68	Hambro	,,
39	Harlingen	,,	162	Rotterdam	,,
27	Dunkirk	London	268	Dieppe	,,
5	Venice	,,	36	Hambro	,,
49	Gothenburg	,,	24	Antwerp	,,
85	Treport	,,	264	Dieppe	,,
70	Philadelphia	,,	312	Ghent	Leith
45	Alexandra	,,	14	Antwerp	,,
49	Stettin	,,	57	Dunkirk	,,
77	Treport	,,	45	Hamburg	,,
142	Rouen	,,	58	Rotterdam	,,
26	Rotterdam	,,	140	Bordeaux	Liverpool
58	Stettin	,,	24	Barcelona	,,
13	Hambro	,,	135	Constantinople	,,
36	Cologne	,,	528	Alexandria	,,
50	Sydney	,,	16	Pauillac	Newhaven
23	Amsterdam	,,	52	Caen	,,
63	Brussels	,,	218	La Pallice	,,
7	Hambro	Goole	5	Rotterdam	Grimsby
100	Antwerp	,,	4	Christiania	,,
71	Boulogne	,,	24	St. Malo	Sthamptn
30	Hambro	,,	23	Rooen	Bristol

Totals from Each Country:

AUSTRALIA	50 bales	ITALY ...	5 bales
BELGIUM ...	718 ,,	NORWAY ...	4 ,,
DENMARK ...	277 ,,	SWEDEN ...	49 ,,
EGYPT	573 ,,	SPAIN ...	24 ,,
FRANCE ...	1825 ,,	TURKEY ..	135 ,,
GERMANY ...	709 ,,	U.S.A.	70 ,,
HOLLAND ...	442 ,,		

FRENCH.

Ex-ship London; Liverpool, Hull, 7/6 extra; Manchester, Bristol, Leith, 10/6 extra.

French Linens, I ...	21/0	Black Cotton	2/0
II 15/6; III	9/6	Blue Linen	7/6
White Cottons, I ...	15/6	New Light Prints ...	16/0
II 12/0; III	8/9	New White Cuttings	20/0
Coloured Cotton ...	3/6	,, Stay	15/0

BELGIAN.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6; Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens, No. 1	21/0	House Cloths... ...	2/9
,, ,, No. 2	16/0	Old Bagging (solid)...	3/0
,, ,, No. 3	12/0	,, ,, (common)	2/6
Fines (Mixed)	12/0	NEW.	
Grey Linens (strong)	9/6	White & Cream Linens	35/0
,, (extra)	14/0	White Cuttings ...	22/0
Blue Linens	8/0	Unbleached Cuttings	21/0
White Cottons No. 1...	18/0	Print Cuttings... ...	8/0
,, No. 2...	15/0	FLAX AND HEMP WASTE.	
Outshots No. 3... ...	10/0	Flax Waste, washed	
Seconds No. 4	8/0	and dried	10/0
Prints (Light)... ...	8/6	Fair	8/0
Fustians (Light) ...	4/0	Flax Card Waste ...	6/0
Fustians (Dark) ...	3/0	Hemp Waste, No. 1...	8/0
Black Cottons	3/0	,, ,, No. 2 ..	3/0
Hemp Strings (unt'r'd)	2/3		

DUTCH.

F.o.r. Hull or Goole; 2/6 per ton extra London and Leith; 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1	14/0	Mixed Hemp Rope	
,, No. 2... ...	9/9	Coils...	8/0
,, No. 3... ...	6/3	Broken (in bags) ...	6/0
Grey Linens	9/0	W. Manilla Rope (coils)	7/3
Clean House Cloth ...	3/0	do. Tarred ,, ...	4/9
Mixed Fustians ...	3/0	Canvas No. 1	14/3
Coloured Prints ...	2/7½	,, No. 2	9/9
Dark Prints	2/1½	,, No. 3	6/3
Blue Cottons	5/0	W. Untarred Rope ...	9/3
Light Lilac Cottons	7/0	Paper Shavings ...	5/0
		Free from wood ...	7/0

GERMAN.

HAMBURG: *F.o.b.*

NWC	19/0	LFX Second ditto ...	7/0
SPFFF	18/0	CSPFFF	14/0
SPFFF and SPFF ...	17/0	CSPFF	10/0
SPFF	14/0	CFB	6/0
SPF	11/0	Dark Blues (selected)	11/0
CCC	5/0	Wool Tares	8/0
CFX	4/0	Jute, No. I., 6/0: No.	
White Rope	6/0	II.	5/0
FF Grey Linens ...	8/0		

STETTIN: *C.i.f. Hull, Leith, Tyne and London.*

SPFFF and SPFF	17/0	LFB (blue)	4/0
SPF	11/0	CSPFFF	10/0
FF	8/0	CSPFF	16/0
FG	8/6	CFB (blue)	6/0
FFX	7/0	CFX (coloured) ...	4/0

PRUSSIAN.

C.i.f. London, Hull, or Leith.

SPFF	16/0	CC (cotton)	4/6
SPF	12/6	Jute I	3/0
FG	10/0	,, II	2/0
LFB	8/0	Rope I	8/0
FF	5/6	,, II	6/0

NORWEGIAN.

C.i.f. London, Hull, Tyne, and Grangemouth.

1st Rope (tarred)	8/3-9/0	2nd Canvas	7/0
2nd ,, ,, ...	5/6-6/0	Jute Bagging	
Manilla Rope (white)	7/9-8/9	Gunny	3/6-5/0
Best Canvas ...	11/9-12/0	Mixed	2/6-2/9

TURKISH.

F.o.b. Constantinople, Smyrna, and Salonica.

1st White Cottons* ...	2/6	Sail Cloth or Canvas	5/0
2nd ,, ,, ...	2/6	Rope, Thick	6/0
Blue Cottons	1/3	,, Small	4/6
Coloured ,, ...	1/3		

*3/0 at Smyrna and Salonica.

WASTE PAPERS.—Market firm. Quotations are nominally as under:

Cream Shavings ...	10/0	Small Letters... ...	3/3
Fine ,, ...	8/0	Large ,, ...	4/0
Mixed ,, ...	2/6	Brown Paper	2/0
White Printings ...	7/0	Light Browns ...	3/3
White Waste... ...	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets	3/0
Blue Paper	2/0	Strawboard Cuttings	1/0
Crushed News ...	2/0	Jacquards	2/6

For Export: 2s. per ton extra.

STARCH.—For Maize and Farina higher prices are quoted.

F.o.r. London, less 2½%:

Maize—	Crisp	£10 0 0
	Pearl	8 10 0
	Powder	9 0 0
	Special	14 0 0
Farina—	Prime...	12 10 0
	B.K.M.F.	14 10 0

Delivered, less 2½:

Rice—	Special (in chests)	19 0 0
	Crystal (in bags)	18 10 0
	Granulated (in bags)	17 10 0
Dextrine		16 0 0

SIZING.—There is a good demand, and prices are firm. Raw materials scarce.

English Gelatine	Per cwt.	£4 10	0—6 0 0
Foreign ,, ...	,,	3 10	0—5 0 0
Fine Scotch Glues	,,	2 5	0—3 0 0
Best Long Scotch Glues ...	,,	2 0	0—3 0 0
Common Black	,,	1 5	0—1 8 0
"Town" Glues	,,	1 18	0—2 5 0
"Bone" Glues	,,	1 6	0—1 10 0
Foreign Glues	,,	1 8	0—1 15 0
Bone Size	,,		5 6— 10 0
Gelatine Size	,,		6 6— 10 0
Dry B.A. Pieces	,,	2 10	0—2 15 0
,, English Pieces	,,	1 15	0—2 5 0
Wet ,, ...	,,		8 6— 9 0
,, Sheep Pieces	,,		3 0— 4 0
Buffalo Hide Shavings ...	,,	1 12	0—2 0 0
,, Picker Waste ...	,,	1 12	0—1 15 0

ROSIN.—Spot prices are as under:

B/C	D	E	F	G	I	K	M	N	WC	WW
5/0	5/3	5/6	5/9	6/3	6/9	7/0	7/6	8/0	8/9	9/6

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MINERALS.—There is a steady demand for CHINA CLAY at unchanged prices. FRENCH CHALK and MINERAL WHITE are in fair request, and there is a good business passing in SATINITE and SNOWDRIFT.

Mineral White (also known as Terra Alba, Gypsum, and Sulphate of Lime), per ton f.o.r. or boat at makers' works, less 2½%:—

Superfine	£1 8 0	del. Lancs.	£1 18 0
Pottery Superior ...	1 4 0	,,	1 14 0
Ball Seconds	1 0 0	,,	1 10 0
Seconds	0 15 0	,,	1 5 0
Thirds	0 11 0	,,	1 1 0

(Manchester, 2s. per ton less.)

China Clay, in bulk, f.o.b. Cornwall, 9s. to £1 3s. 6d., bags 4s., and casks 9s. 6d. per ton extra; delivered Lancashire, £1 18s. od. to £2 1s. 6d. (for best papers); f.o.r. London, in casks, £2 5s. od. per ton; f.o.b. Liverpool, in 5 cwt. casks, £2 2s. od. to £2 10s. od.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, £2 19s. od., £3 4s. od., £3 13s. 6d., and £3 17s. 6d. per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15s. od. to £5 2s. 6d. per ton of 10 bags.

Superfine Hardening, f.o.r. works, £2 os. od. to £2 2s. od.

Patent Hardening (2 ton lots), f.o.r. Lancs., £3 5s. od.

Snowdrift (Paper Toughener), in ton lots, 12s. od. per cwt.

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16s. 6d.; calcined, £10 7s. 6d.

Magnesite (in lump), £1 1[illegible]d. per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 os. od. to £4 10s. od. per ton c.i.f. London, Manchester, and Glasgow.

Asbestos, brown grades, £14 os. od. to £14 12s. 6d.

Sulphate of Barytes, No. 1, £3 4s. od.; No. 2, £2 12s. od.; No. 3, £2 2s. od.; No. 4, £1 17s. 6d. per ton, according to quality.

Bauxite, minimum alumina, 60%, 16s. 3d. f.o.b.

Pyrites (non-cupreous), f.o.b. shipping ports, 4¾d. per unit.

Satinite, £3 os. od. to £3 6s. 6d., in casks, f.o.b. Liverpool or Manchester.

Whiting, f.o.b., 10s. 6d. to 12s. 3d. per ton.

Sulphate of Alumina, £4 2s. 6d. to £4 15s. od. per ton del.

Hydrate of Alumina, £12 10s. od.

METALS.—LONDON: COPPER steady; TIN active; LEAD steady. Tuesday's official closing prices:—

Copper—		
G.M.B., cash	£51 5 0	—51 10 0
,, three months	51 10 0	—51 15 0
Tough	54 0 0	—54 15 0
Best selected	54 10 0	—55 10 0
Strong Sheet	61 10 0	—
Tin—		
Fine foreign, cash	67 15 0	—68 5 0
,, three months... ...	68 5 0	—68 15 0
Lead—		
Spanish	13 12 6	—13 13 9
English		13 16 3

LIME.—The present price is 10/6 per ton f.o.r. works.

COLOURS.—Trade steady. Quotations are nominally as follows:

Mineral Black	Per Cwt.	£0 3 0
,, (Superior)...	,,	0 4 6
Ivory Black (Pure)	,,	0 12 0
Ochre	,,	0 2 3
French (J. C. Ochre)	Per Ton	3 0 0
Chrome (Pure)	Per Cwt.	2 0 0
Red Oxide	,,	0 4 6
Umber (Devonshire)	,,	2 10 0
,, (Turkish)	,,	2 0 0
Lamp Black...	,,	0 5 0
Ultramarine (Pure)	,,	1 15 0
Cochineal	Per lb.	0 1 3
PASTE COLOURS, with 60% of Colour: (less 2½% d/d.)		
Orange Pulp...	Per Cwt.	2 0 0
Golden Yellow Pulp	,,	1 10 0
Lemon Yellow Pulp	,,	1 10 0
Prussian Yellow	,,	1 16 0
Green (free from Arsenic)	,,	1 16 0
Paste Blue, 20%	,,	0 18 0
,, 33%	,,	1 6 0
,, 45%	,,	2 5 0
Imperial Yellow (dry)	,,	0 16 0

JUTE.—Prices:

Good White	£15 0 0—16 10 0
Good	13 0 0—14 10 0
Medium	10 0 0—12 10 0
Common	7 0 0— 9 0 0
Rejections	6 10 0— 8 10 0
Cuttings	3 0 0— 4 0 0

BALING TWINE.—Prices:

	Thick.	Medium.	Fine.
Hemp ...	4d. per lb.	4¼d. per lb.	5d. per lb
Mixed ...	3¾d. ,,	4¼d. ,,	4¾d. ,,

Alkali and Bleach.

The following statistics, taken from the official returns, show the quantity and value of alkali and bleaching materials shipped to the countries mentioned for the month of May and for January-May, 1898, as compared with 1897:—

ALKALI.

COUNTRY.	MAY.		JAN.-MAY.	
	1897.	1898.	1897.	1898.
Quantity ...	Cwts.	Cwts.	Cwts.	Cwts.
Russia	41,970	33,106	75 868	65.230
Sweden & Norway	10,444	12,078	28,148	49,002
Germany	20.635	7,521	62,150	57,440
Holland	10,950	9,559	46,490	46,502
France	5,875	6,041	24,802	26,042
Spain & Canaries...	27,821	20,372	128,351	123,581
Italy...	20,348	21,662	91,389	104,510
United States ...	230,597	67,855	1,075,938	442,486
Australasia ...	20,091	26,643	85,956	86,855
B. N. America ...	16,737	18,061	45.206	60,376
Other Countries ...	96,227	98,457	447,225	524,006
Totals ...	501,695	321,355	2,111,523	1,586,030
Value	£	£	£	£
Russia	11,998	8,796	21.510	18,741
Sweden & Norway	2,184	2,999	5,513	10 961
Germany	3,902	2,274	14,869	13,613
Holland	1,928	1,967	9,297	9,615
France	2,023	2,201	8,737	9 178
Spain & Canaries...	5.709	6,464	41,838	41,097
Italy...	5,581	6,400	26,587	31,599
United States ...	56,925	13,553	251,383	85,252
Australasia... ...	6,076	8,435	24,935	26,970
B. N. America ...	3,533	5.179	11,722	16,737
Other Countries ...	25,405	28,762	121,285	110,595
Totals ...	128 261	87,030	537,656	414,388

BLEACHING POWDER, &c.

Quantity	Cwts.	Cwts.	Cwts.	Cwts.
United States ...	52,424	62,038	276,195	308,007
Other Countries ...	38,822	29,036	158,258	139,099
Totals ...	91,246	91,074	434,453	447,106
Value ...	£	£	£	£
United States ...	16,772	15,064	88,459	84,379
Other Countries ...	12,691	9,324	51,898	44,097
Totals ...	29,463	24,388	140,357	128,476

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THE DISPOSAL OF

Waste Sulphite Liquors.

By L. J. DORENFELDT.

During the past year or two experts have devoted considerable attention with the view of devising a satisfactory method of disposing of waste sulphite liquors. Manufacturers of sulphite are liable to be subjected to the most harassing conditions at the hands of local authorities, and therefore it need hardly be mentioned that they are particularly interested in the various developments made known from time to time in the technical press. We have during the present year referred to the work of several well-known authorities, and now reprint a paper—kindly translated by the author, Mr. L. J. Dorenfeldt, of Rheindürkheim a/-Rheine—read some time ago before a meeting of German cellulose makers at Frankfort.

Mr. Dorenfeldt prefaced his remarks by quoting from Hofmann's Treatise, page 1510:—

"According to a method patented in Austria by Dr. V. B. Drewsen and L. J. Dorenfeldt, sulphate of soda is added to the usual bisulphite of lime liquor, whereby a transformation into sulphate of lime and sodium bisulphite is effected. About two-thirds of the lime may be precipitated in this way. It is claimed that the pulp obtained with this combined calcium-sodium-bisulphite liquor will be of superior quality, and that it will bleach with only 5 to 7 per cent. of bleaching powder, and that the digesting process may be extended to a more complete exhaustion of the liquor than otherwise without any injury to the quality. Mr. Dorenfeldt will neutralise the spent liquor from this method with reclaimed soda, concentrate it, burn it off, and reclaim the alkali just as is done in the ordinary soda pulp process. According to his experiments and minute calculations, spent sulphite liquor contains such a quantity of combustibles from the digested wood as will suffice not only for the evaporation and the incineration of the liquor, but as will also leave a surplus of heat. Mr. Dorenfeldt will therefore burn off the sulphite liquors into ash, not only without any expense of coals, but will still raise steam. Whether his experiments and calculations will prove to be correct or not when the method is operated on a large scale, has to be looked forward to."

Mr. Dorenfeldt said he had hoped to have been able to have given to the trade practical results, as a great mill bought the process to work, and plans of erection, etc., were prepared, but elementary accidents had put an end to the proceedings for the present. Mr. Dorenfeldt then said:—As similar doubts, as in Hofmann's Treatise, have been experienced in trade periodicals as to the possibility of solving the spent liquor question in a remunerative way by my method, I am very thankful to the chairman, Mr. Commerzienrath Dessaner, for the present opportunity of demonstrating to the Association of Cellulose Makers the results of my experiments.

Five years ago I fell upon the idea of examining the nature of the organic matters of waste soda pulp liquors. As these experiments—in connection with which I had the most valuable assistance of Mr. Wleügel, Professor of Chemistry at the Technical College of Drontheim, and of Mr. Vauvert,* C.E., Siebenburgen—were crowned with far better results than I had expected, I found it worth my while to go in for the examination also of other spent liquors, like esparto and sulphite pulp liquors.

I had at my disposal for this purpose two liquors from Flodquist digesters, the one a usual bisulphite of lime liquor, and the other a sodium bisulphite liquor, and both of sp. gr. 1·05 (10 degs. Tw.). I evaporated these liquors to air dryness, and determined the calorific power of the organic matters by burning off in a Berthelot's calorimeter as modified by Professor Dr. Hempel. I found herewith, from a great number of tests, the average calorific power of the incrustations of one litre of waste liquor = 560 u.h. (metrical and centigrade), or of one cubic meter = 560,000 u.h., which means the calorific power of 80 kilos. of coals of 7,000 u.h. I further tested the calorific power of liquors from an Austrian, and also from a well-known German sulphite pulp mill, and the results corresponded very well with the above. Thus per ex. the German Ritter-Kellner liquor, of sp. gr. 1·043 (8½ degs. Tw.), developed a calorific power of 530 u.h. for every litre, or 530,000 u.h. for every cubic meter, which is equal to 76 kilos. of coal of 7,000 u.h. calorific power. One cubic meter spent sodium bisulphite liquor, of sp. gr. 1·05, after being neutralised with Na_2Co_3 (reclaimed soda), leaves about 125 kilos. of bone-dry substance, of which about 25 kilos. are ash. This varies, of course, somewhat, according to the chemical composition and the degree of exhaustion of the spent digesting liquor. If the spent liquor reaches the incinerating furnace with a density of at least 40 degs Be. (77 degs. Tw.), there are still at most 80 kilos. of water left to be evaporated. If pure carbon of calorific power 8,080 u.h. is substituted for the above 560,000 u.h., each kilo. of this 40 degs. Be. weighing liquor may be considered a combustible of the following composition:—0·437 kilos. of carbon, 0·4 kilos. of water, and 0·125 kilos. of ash. As a brown coal, containing 54·39 per cent. of water, and developing a total calorific power of 2,866 u.h., gave a useful effect of 61·3 per cent., so is the calculated composition of the concentrated sulphite liquor so favourable, that the useful effect of this combustible can, without any scruples, be also reckoned to at least 60 per cent.

Of the 560,000 u.h. developed from one cubic meter of waste liquor, this

$$560{,}000 \times \frac{60}{100} = 336{,}000$$

may be utilised in steam boilers fed with waste liquor. Assuming the waste liquor to reach the steam boiler at 50 degs. C., and to leave it at 170 degs. C., there are consumed $(170 - 50) \times 1{,}000 = 120{,}000$ u.h. for the heating of the liquor, and 336,000 — 120,000 = 216,000 are accordingly left for raising steam. As the latent heat at 170 degs. C. is = 488 u.h., accordingly,

$$\frac{216{,}000}{488} = 444 \text{ kilos. of water are}$$

evaporated in the steam boiler. One cubic meter of spent liquor contains 937 kilos. of

* Mr. Vauvert was killed by an accident in January, 1898.

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MILAN	Via Princ Umberto 5.
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water, and as of these already 80 + 444 = 524 kilos. have been evaporated in the incinerating furnace and the steam boiler, accordingly, only 413 kilos. are left to be evaporated in the multiple vacuum apparatus.

As shown in my article in the *Paper Trade Review* of the 31st October, 1890, one kilo. of steam will evaporate at least 4½ kilos. of water from a liquor of 170 degs. C., and if we reckon only with 4, to be quite on the safe side, 104 kilos. of steam are used for the vacuum evaporator. Of the 444 kilos. of steam raised in the steam boiler, accordingly a surplus of 340 kilos. is spared for other purposes, and this represents 43 kilos. of good coal of a steam-raising power = 8·1. To be added thereto are about 400 kilos. of drip-water of 100 degs. C. from the evaporator, and from the surface condenser about 2,000 kilos. of water of 35 degs. C., which, at a feed-water temperature of 10 degs. C., means together further 15 kilos. of coal, making in round numbers the total surplus of the calorific power from one cubic meter of liquor after evaporation and incineration, equal to 58 kilos. of coal of steam-raising capacity 8·1.

If one will not or cannot feed the neutralised liquor into the steam boiler, the utilisation of the combustible will bring the following results :—One cubic meter of liquor gives to the steam boiler as above 336,000 u.h. If the boiler is fed with drip-water of 100 degs. C. from the vacuum evaporator, there will, at a temperature of 170 degs. C. in the boiler, be raised :

$$\frac{336{,}000}{660 \div 100} = 600 \text{ kilos. of steam.}$$

937 ÷ 80 = 857 kilos. are to be evaporated in the vacuum evaporator. Reckoning also here as above, with an extra coefficient of surety, I will for the 2·4 kilos. of water, which are generally evaporated by 1 kilo. of steam from a liquor of 50 degs. C. temperature, substitute only 2·2, and accordingly the consumption of steam will be

$$\frac{857}{2{\cdot}2} = 390 \text{ kilos.}$$

There are left 600 — 390 = 210 kilos. of steam, representing 26 kilos. of coal. To this must be added, in round numbers, 600 kilos. of drip-water of 100 degs. C. from the evaporator, and from the surface condenser 4,000 kilos. of water of 35 degs. C., which together represent another 26 kilos. of coal, so that the total surplus of calorific power obtained from one cubic meter of liquor will represent about 52 kilos. of good coals, also without feeding the boiler with the liquor.

I don't think that the correctness of my calorimeter tests can be called in question, for the proof is easily and speedily made, if one remembers that wood in bone-dry state develops a calorific power of about 4,400, and cellulose of about 4,000 u.h.—100 kilos. of air-dry cellulose give 90 × 4,000 = 360,000 u.h., and the 200 kilos. of bone-dry wood corresponding herewith give 200 × 4,400 = 880,000 u.h. The difference of 520,000 u.h. belongs, of course, to the incrustations, and corresponds very well indeed with the calorimeter tests, according to which 1 cubic meter of spent lye should deliver 530,000—560,000 u.h., 100 kilos. of cellulose giving at least 900—1,000 litres of spent lye.

Hofmann, in his treatise, speaks repeatedly of only 800, and Schubert goes to the extreme of only 600 litres of spent lye on 100 kilos. of cellulose. Both gentlemen, however, do not seem to have taken into consideration the dampness of the wood and the water carried into the digester in form of steam. To my judgment they had both of them better make their statements 25 to 30 per cent. higher. As the washing of the pulp will inevitably give a loss of 5 to 10 per cent., I will not reckon with more than 9 cubic meters of spent liquor for every 1,000 kilos. of cellulose, and accordingly a saving of 9 × 58 = 520 kilos. of coal should be obtained for every 1,000 kilos. of cellulose.

Although the above explanations of mine will most likely be accepted without contradiction from a mere theoretical point of view, I expect, however, the possibility of practically reaching such results to be put to question with the argument, as recently used in trade journals, of the great consumption of fuel in the soda recovery of the soda pulp mills. There exist sulphate of soda pulp mills in Sweden which *do* obtain a surplus of heat from their soda recovery, and I am told that this circumstance has been weighing down the scale of the sulphate process in cases where the erection of a sulphite mill might otherwise have been chosen. This good result is obtained, although the plants, of which I have a knowledge, are not, according to my judgment, faultless in every respect, as the latent heat of the steam is not duly utilised, whereas the gases of combustion are by apparatuses of special construction made to give off the heat to the most possible extent.

Contrasting herewith the Americans, who are also working very cheaply, and are paying more attention to the latent heat in their vacuum evaporators, in all cases known to me the utilisation of the heat of the gases is far from being sufficient, although their rotary furnaces ought to have opened their eyes in this direction much before the Swedes and others, who are using periodically working incinerating and evaporating furnaces. If the Swedes would adopt the good from the Americans and *vice versa*, it would turn out just the right thing.

Further, two faults are found in most mills, the influence of which on the utilisation of the fuel is not duly considered. There is carried too much *water* with the liquor into the chamber of combustion, and there is mostly worked with too great excess of *air*. Thus, I have calculated the daily loss effected by these two faults in Ranhiem's Cellulose-fabrik, Norway, when under my management, to 5,600 kilos. of coal at a production of 12 tons of cellulose, and further, there was also effected a great indirect loss by these circumstances, as the temperature in the incinerating furnace would for long periods become as low as to effect dry distillation without combustion.

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To demonstate the effect of the percentage of water on the utilisation of the spent liqour we will, for the obtainable concentration of 40 degs. Be. as possessed by the above calculated sulphite liquor, substitute only 30 degs. Be. (53 degs. Tw.), being the most frequent degree of concentration. The incrustations would then come to the combustion chamber with about twice as much water and the pyrometrical effect (the temperature of combustion calculated with only the theoretical amount of air) would sink from 2,086 to 1,623 degs. C., and this means from 16 to 20 per cent. loss of heat, reckoning in both cases with twice the theoretical amount of air, and with the same temperature of the chimney-gases, although the latter would be the highest with the lowest furnace temperature.

Everybody with a knowledge of the construction and with experience of the periodical working of the common incinerating and evaporating furnace will at once understand how considerable the losses by dry distillation are, when he is told that already at a temperature of 260 degs. C. more than 40 per cent. of all incrustations distil over.

I need not, however, confine myself only to this *indirect* proof, which is based on results already obtained and on the weak points of plants for recovery of soda from soda pulp liquors, as I can *directly* take advantage of the working results of the Brungger furnace for incineration of spent sulphite liquor. I was told by a well-informed party, and I found it confirmed in Mr. Carl Hofmann's Bohemian travels, that Mr. Brungger is evaporating with one kilo. of coal fifteen kilos. of spent liquor, which means that the evaporation and incineration of one cubic meter of spent liquor consume 67 kilos. of coal. In an apparatus with as many constructive faults as in the evaporating furnace the very best coal cannot, however, effect more than at the most 7 kilos. of evaporation, and the other evaporative work is accordingly to be credited only to the incrustations. Of the 937 kilos. of water contained in one cubic meter of spent liquor in the Brungger furnace, accordingly $67 \times 7 = 469$ kilos. are evaporated by the coals, and the other 468 kilos. by the incrustations, which thus represent also 67 kilos. of coals of an evaporative power of 7. This corresponds very well indeed with the results to which I have come in quite a different way by experiments. I therefore believe to have delivered, directly, as well as indirectly, the proof that I did not say too much by promising to dispose of spent sulphite liquors with a surplus of fuel. Then there is the question of apparatus, concerning which I may perhaps have something to say on a future occasion.

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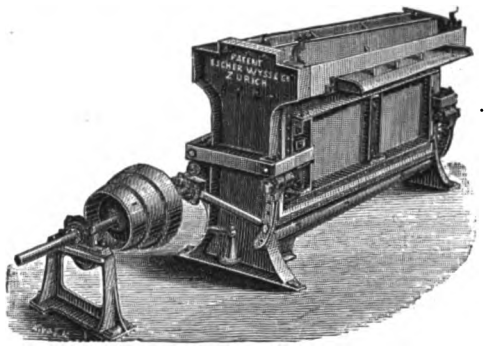

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Commercial Intelligence.

Re BENNS BROTHERS and CO., Wholesale and Export Stationers.

A sitting of the London Bankruptcy Court was held last week, before Mr. Registrar Giffard, for the public examination of Walter Bowness Benns, John Benns, and Henry George Curry, trading in partnership as above, at 12, St. Benet's-place, Gracechurch-street, City. The debtors had filed a joint statement of affairs showing debts £631 19s. 11d. and assets £44 12s. 6d. Mr. W. B. Benns' separate accounts show debts £97 1s. 8d. and assets £60; Mr. John Benns has separate debts £113 9s. 9d. and assets £60; and Mr. H. G. Curry returns his separate debts at £2,458 6s. 4d. and his personal assets at £100. It appears from the evidence that in November, 1895, with £126 capital, W. B. and J. Benns commenced business as wholesale stationers at 12, St. Benet's-place. They shortly afterwards entered into an agreement with Mr. A. Peraut, a French manufacturer of a patent adhesive paper and linen tape, used for repairing books, music, etc. M. Peraut granted to them the sole agency for the sale of the patent in Great Britain and all British possessions. In June, 1896, they were joined by H. G. Curry, who introduced altogether £317 as capital and who was simply a sleeping partner. They subsequently traded together in co-partnership under the same style until June, 1897, when, in consequence of the heavy expenses of establishing the business and to want of capital, they sold it to the Stationery Specialities Syndicate, Limited, which was formed for the purpose of taking it over. The purchase price was agreed at £3,000, and was payable in fully paid shares, which had not yet been allotted. The partnership of the firm has been dissolved, and the syndicate went into voluntary liquidation. The failure is attributed mainly to loss in trading in consequence of the heavy expenditure incurred in advertising and trying to establish the business, to bad debts, and to loss on the forced sale of stock under a distress for rent. Mr. W. B. Benns said in 1894 he went out to Australia for the benefit of his health and was there engaged as a commercial traveller. Whilst out there he was engaged by a mining company to publish maps of the country. There was still a number of those maps at St. Benet's-place, but were now out of date and consequently possessed no value. His brother John had also been a traveller to wholesale stationers. Altogether he (W. B. Benns) had put in £600 for the purposes of the business. The firm first got into difficulties at the end of 1896, the sole cause being the transparent tape. They had the sole agency, and were able to supply the wholesale trade at 12s. per gross. It appeared that a similar article was sold in Paris at a cheaper rate, and the English buyers, learning that fact, bought in the French markets through commission agents. Witness's firm had entered into a contract with Mr. Peraut for twelve months, and owing to this competition, they lost the money expended in establishing and advertising the business. Being in difficulties, they arranged to sell their business to the Stationery Specialities Syndicate, Ltd., for £10,000. As vendors they were only to receive £3,000, the remaining £7,000 going to the promoters. The Syndicate had an existence of twelve months before going into voluntary liquidation. It was not until last June that the firm really found itself insolvent. An attempt was made to establish an Australian agency, and goods were sent out there on terms whereunder witness's firm were to draw six months' bills at 120 days from shipment. That, he admitted, was an unusual arrangement, but at the time they had the transparent tape agency, and expected to make a good thing of it in Australia. Asked further regarding the arrangement with Mr. Peraut, witness said that gentleman required 15,000 francs to be lodged by each party for the due fulfilment of the contract, and 1,000 francs was handed by their firm as a deposit pending the contract being legally drawn up. The remaining 14,000 francs was later lodged by Mr. Solomon on behalf of the Syndicate. This was his first failure. Mr. John Benns was also examined by the Official Receiver, and generally confirmed his brother's evidence. This was also his first failure. Mr. H. G. Curry having also given evidence, the examination was ordered to be concluded.

THE BOUVERIE PRESS.

A winding-up order having recently been made against the Bouverie Press Company, the statutory meetings of creditors and shareholders were held last week at the Board of Trade offices, Lincoln's-inn, Mr. A. S. Cully, assistant receiver, presiding. The statement of affairs showed unsecured liabilities £14,186, and after satisfying claims on debentures it was estimated that a sum of £139 would be available for the unsecured creditors. The chairman reported that the company was apparently formed for the benefit of the promoters and directors, and to enable them to trade under the Limited Liability Acts without any personal risk. The business appeared to have been conducted in a reckless manner and without any regard to the interests of the creditors. No proper books of account had been kept or balance-sheets prepared. It was, however, only fair to state that the directors had found a considerable amount of capital, which had all been lost. The company was registered in March, 1895, with a capital of £2,000, in £1 shares, and was formed to

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establish, print, and publish newspapers, the promoters being Mr. W. W. Bowman and Mr. S. D. Byles. In October, 1896, the company purchased the *Club World* for £40 in cash, and in May, 1897, they also acquired the *Spinning Wheel* newspaper for £400. After conducting the latter for a little time it was sold for £100. Many of the creditors scheduled claimed in respect of amounts subscribed for prize competitions, and in respect of a bicycle club. The matter would require careful investigation. It was decided that the official receiver should act as liquidator, and a committee of inspection was also appointed.

Re WILLIAM HUDSON,
Trading as Hudson & Company,
Letterpress Printer,

This debtor filed his petition at the London Bankruptcy Court last March, and he now attended before Mr. Registrar Hood for public examination upon accounts showing total liabilities £3,073 3s. 1d. of which £2,786 2s. 10d. are expected to rank against assets valued at £1,109 19s. 2d after providing £50 0s. 3d. for payment of the preferential claims. Under examination by Mr. H. Brougham, official receiver, the bankrupt stated that in March 1878 he entered into partnership with his employer's three sons, with a view to taking over the business carried on by Mr. Bowden, the said employer, at 23, Red Lion-street, Holborn. The purchase price was £3,000 payable by instalments, and there was still due a balance of about £180. Each partner had as capital a sum of £100 which was paid over to Mr. Bowden, who advanced them jointly £1,500 as working capital, and took a bill of sale over the plant and machinery for £4,500. They traded under the style of Bowden, Hudson and Co. until 1887, when one of the Bowdens retired, receiving £350, as representing his share in the business. The business was continued in the same style until 1894, when the widow of Mr. Bowden, senr., called in her capital, then standing at about £600. The bill of sale was then withdrawn, and an agreement was entered into whereby the balance then owing was to be repaid by quarterly instalments of £30. In 1895 the firm was in some financial difficulty, and Mr. Taylor, a friend, advanced witness about £1,000, with which he paid certain debts, and £225 to his partners who then retired, leaving him in sole possession of the business. He bought out the partners because he wanted to preserve the business and carry on the contracts then in existence. Under the terms of the dissolution witness took over the business, paid out his partners, and discharged the outstanding liabilities which amounted to £1,700, including the amount due to Mrs. Bowden, senr. He subsequently continued the business by himself, but under the style of Hudson and Co., until he filed his petition last March. Witness attributed his failure immediately to the calling in of his capital by Mr. Taylor, and to the payments made to the retiring partners. Mrs. Bowden, senr., also called in her money and instituted legal proceedings with a view to enforcing payment. Further causes were the liabilities taken over by witness on the dissolution of partnership in 1895; inability to extend business through want of working capital; and the consequent loss on the trading. Witness admitted that the books of account were incomplete in certain respects. He further accounted for his present deficiency by depreciation in the value of the stock and heavy plant. The bankrupt was examined at some length regarding a couple of customer's acceptances, £50 and £87 18s. respectively, that had been handed over to Mr. Taylor. He stated that the bills were given on account of repayment of the advances. Mr. Taylor took possession of the business in January last in accordance with a notice given in the previous October, and was consequently in a position to take the customers' acceptances when they came in. This was witness's first failure. The examination was ordered to be concluded.

Re T. J. DEWICK,
Printer.

Mr. Thomas James Dewick, of 7, Turle-road, Tollington-park, who lately carried on business at 46, Barbican, as a printer, in the name of Dewick and Co., came before Mr. Registrar Giffard, in the London Bankruptcy Court. Mr. Watkin, solicitor, represented the debtor. The senior official receiver, Mr. E. Leadam Hough, in his "observations," stated:—The liabilities amount to £1,686 18s. 6d., of which £1,267 6s. 9d. is expected to rank. There is £1,267 6s. 9d. due to unsecured creditors, and £376 12s. 6d. to five creditors who hold securities worth £519 13s. 1d. The assets comprise—cash in hand, 10s.; stock-in-trade, £514; plant, machinery, tools, fittings, etc., £75; book debts, £91; and surplus from securities held by creditors, £143 0s. 7d. After making all deductions there is a deficiency of £185 16s. The receiving order was made on the petition of the debtor, who had been adjudged bankrupt. At the first meeting of the creditors, held on April 22nd, it was resolved that the official receiver remain trustee to the estate. The bankrupt states that he and a partner carried on business as printers and stationers at 46, Barbican, E.C., for many years prior to September, 1893, when they assigned their estate to a trustee for the benefit of their creditors. In the following May he agreed to buy from the trustee the trust estate for a sum sufficient to pay the costs, and 10s. in the £ on the liabilities, payable by quarterly instalments of £80 each, it being arranged that he was to be at liberty to use the trust estate for the purposes of the business on his undertaking

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to make good the same, and that until the price was fully paid the estate should belong to the trustee. The bankrupt then continued the business alone under the style of Dewick and Co. He paid on account of the purchase price sums amounting together to £502 6s., but the instalments being in arrear the trustee, on or about October 23rd last, sold the outstanding trust estate for £300 to a purchaser who resold it to a firm of printers and stationers, for whom the bankrupt acted for a time as traveller at £1 4s. per week. Out of the sums of £502 6s. and £300, dividends amounting to £3,409 10s. 4d. have been paid to his late firm's creditors. The bankrupt admitted that he had been insolvent since his previous failure, when no arrangement as to his separate debts was made, and he attributes his present failure mainly to the forfeiture of the instalments paid under the arrangement with the trustee, and to interest on borrowed money and law costs. He had filed the following deficiency account, which dated from April 5th, 1895:—Estimated deficiency then existing, £490; household and personal expenditure, £813 15s. 8d.; instalments of purchase-money paid since the said date (forfeited), £354 15s.; interest on borrowed money and law costs, £250; depreciation in value of stock, plant, etc., £91; bad debts, £41 14s. 7d.—total, £2,041 5s. 3d. Deduct from this: Profit in trading, £1,378 3s. 3d.; salary from October 23rd last, £96 12s.; profit rental arising from the leasehold premises, £80 14s.—total, £1,555 9s. 3d., thus leaving a deficiency of £485 16s. The books of account produced, consisting of cash, day, account, and subsidiary books and ledgers, appear to record the bulk of the bankrupt's business transactions, but they do not disclose his financial position. Of the unsecured liabilities about £588 is stated to be due to cash creditors, £100 represents solicitors' costs, and £81 8s. 7d. goods supplied for personal use, medical attendance, etc. The other debts appear to be due to trade creditors. The creditors treated as fully secured are respectively stated to hold the following securities, viz., against £26 19s. 11d. and £92 13s. 2d. cash advanced, first and second mortgages on four policies of assurance on the bankrupt's life for sums amounting together to £600, effected during the years 1880 to 1888, and of the present estimated value of £119 13s. 1d.; against £151 and £103 6s. 11d. cash advanced and money paid on account of debtor, mortgage, and equitable charges respectively on lease of the estimated value of £380, of No. 46, Barbican, having about three years unexpired, at a rent of £100 per annum (the premises are sublet at rents amounting to £278 per annum); and against £2 12s. 6d. due for work done, lien on trade goods of the estimated value of £20. The bankrupt states that he replaced all the material, etc., used by him under the arrangement referred to above, and that the stock, plant, and machinery mentioned in the summary represent additional effects acquired by him during his trading. Most of the good book debts are stated to have been assigned in October last to the purchaser of the trust estate, but the bankrupt states that the assignment is invalid, having been made in part performance of an arrangement which was never carried through. The other book debts appear to have been handed over for collection by the bankrupt to his late employers—the sub-purchasers of the trust estate. The furniture (which is estimated at the value of £100) in the bankrupt's residence is stated to be subject to the trusts of an ante-nuptial settlement executed in or about 1875. In the view of the official receiver the value of the assets is very considerably over-stated. The debtor said his cash book had not been balanced since February, 1896, although a balance-sheet had been rendered every three months to the trustee. In answer to Mr. Watkins, bankrupt said he had known Mr. Bowen for many years. They dined together four or five times a week. He made a confidante of Mr. Bowen, and looked upon him as a very kind friend at one time. He had given debtor very good advice at times with regard to little difficulties in his business, and he lent him sums of money, refusing to take any interest. He had every reason for supposing Mr. Bowen was a disinterested friend. Mr. Bowen advised him to let him buy out the business for debtor, and ultimately they came to terms, although Mr. Bowen afterwards refused to carry out the arrangement. The examination then closed.

Company Registrations.

EFFINGHAM PRESS, Ltd.

Registered with a capital of £1,200, in £1 shares, to adopt an agreement with M. Moser for the acquisition of certain copyrights, and to carry on the general business of printers and publishers.

"NEW IRELAND" PUBLISHING CO., Ltd.

Registered with a capital of £3,000, in £1 shares, to acquire the publication known as *New Ireland*, to print and publish the same, and as printers and publishers generally. Registered without articles of association.

GENERAL PRINTING CO., Ltd.

Registered with a capital of £5,000, in £1 shares, to carry on the business of printers and publishers, advertising agents, papermakers, etc., in all its branches. Table A mainly applies.

BRITANNIA WORKS CO. (1898), Ltd.

Registered with a capital of £380,000, half in £6 per cent. preference and half in ordinaries, to purchase for £380,000, and extend, the existing business at Ilford for the manufacture of dry-plates, films, and photographic papers.

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Abridged Patent Specifications.

10,901 (97).—**A Process or Means for Producing Coloured or Decorative Effects on Paper or Other Surfaces.**—SOCIETE ANONYME A. ROUDILLON ET CIE. Accepted 26th February, 1898.

When drops of oil fall on water they spread out, presenting beautiful interference colours, which, however, soon disappear. This invention relates to means of fixing these colours so that they resist rubbing or other rough treatment. For this purpose a solution of about 10 per cent. judea bitumen in crystallisable benzene, with addition of a few drops of essence of lavender or spikenard, is employed. Besides any paper, other smooth surfaces may be employed for receiving the colours.

10,349 (97).—**Improvements in or relating to Automatic Paper-feeding Devices for Printing Presses.**—LOUIS GERÖ. Accepted 26th February, 1898.

Relates to cylinder printing presses and has for its object the construction of an improved mechanism or device for feeding the sheets to be printed to the impression cylinder. The essential features of the invention consist, firstly, in the peculiar disposition and construction of the feeding table; secondly, in the peculiar construction of the suction pipe, which is movable upon an eccentric axis and which is provided with recesses or bends for the paper pile holders and for the grippers of the impression cylinder; thirdly, in the peculiar manner in which this suction pipe is moved in order to prevent the carrying along of several sheets instead of one. The feed paper is placed quite close to the impression cylinder so that the distance which the sheets have to traverse becomes as short as possible. This table is adjustable and guided by a suitable device permitting of its being raised automatically by a weighted lever in the same measure as sheets are being taken from the top of the paper pile, so that the point of the latter, at which the top sheet is subjected to the suction of the pipe, will always be kept at a uniform level. The entire pile of paper is, up to the last sheet, held upon the table in such manner that none of the sheets can shift or become displaced during work. The suction pipe is eccentrically journalled in an oblong frame at either end, the two frames being swung with the suction pipe from the paper pile to the impression cylinder and back again. The suction pipe is provided with a suitable number of recesses or bends which correspond with the grippers of the impression cylinder. When the suction pipe is swung back upon the paper pile, it rests upon the topmost sheet in such a manner that its suction holes are situated at the front edge of the paper. Up to the moment when the suction pipe arrives in this position the topmost sheet is still held down by a hook. Immediately after the suction pipe has touched the topmost sheet, the air is exhausted from the pipe through its hose, whereby the sheet is drawn against the suction pipe, and at the same instant the hooks, which hold the paper pile in position, are removed from the latter. The suction pipe is turned in its bearings and rolled a short distance to the rearward, the topmost sheet, still held to the pipe by suction, being by this rearward rotation of the pipe partly wound upon this latter, and as this pipe rests for a short time in this position, the underlying sheets, which may have been lifted together with the top one in consequence of the adhesion, have time to drop back upon the pile. The hooks then swing back against the pile and hold down the sheets until the next one is to be fed to the cylinder, and the suction pipe, together with the sheet adhering to it, is swung forward upon the impression cylinder. Upon the way the suction pipe is caused to revolve in its bearings, and the forward edge of the sheet still adhering to the suction pipe is brought to the lowest point of the frame and upon the impression cylinder. Almost simultaneously the grippers of the impression cylinder reach their top position and meet the edge of the sheet, close down upon it, and hold it fast in the customary manner. At the same time as the closing down of the grippers the atmospheric air is permitted to enter by the hose into the suction pipe, the sheet thereby being instantly released, and may then be carried around the impression cylinder.

22,869 (97).—**Improvements in Apparatus for use in Feeding Paper to Printing Machines.**—JEAN WYSSA. Accepted 19th February, 1898.

An apparatus intended to be applied to a cylinder printing press, upon which sheets of paper which lie on the table at the top of the machine are to be seized one by one, carried over to the cylinder and left in the grip of the latter exactly in a predetermined position in order to be printed. This end is attained, according to the present invention, by the combination of the usual parts of the printing machine (which may be of any suitable type) with a double-acting air-pump, and with a series of dry-cups, which are connected with the pump by means of suitable tubes, and which are supported by a device which is connected, by means of suitable gear, with a movable part of the printing machine, in order to move the dry-cups, in a plane parallel to themselves, from the face of the table carrying the paper to be printed on to the cylinder, suitable means being provided for causing the paper to be lifted by suction by the dry-cups when the latter lie on the upper sheet of the stock of paper to be printed, and for stopping such suction of the dry-cups when the device has performed the removal of the sheet of paper from the table to the cylinder.

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	Cm.	Inches	Mark	£ s.	Mark	£ s.	Mark	£ s.	Mark	£ s.	Mark	£ s.
A B..	50	19½	425	21 5	550	27 10	150	7 10	100	5 0	80	4 0
A Ba.	55	21½	485	24 5	610	30 10	160	8 0	105	5 5	80	4 0
A C..	60	23½	575	28 15	700	35 0	175	8 15	110	5 10	85	4 5
A Ca.	65	25½	650	32 10	775	38 15	185	9 5	115	5 15	85	4 5
A D..	71	28	730	37 0	865	43 5	200	10 0	120	6 0	90	4 10
A Da.	76	30	825	41 5	950	47 10	220	11 0	125	6 5	90	4 10
A E..	83	32½	950	47 10	1,075	53 15	240	12 0	125	6 5	95	4 15
A Ea.	91	35½	1,050	52 10	1,175	58 15	250	12 10	130	6 10	95	4 15
A F..	95	37½	1,150	57 10	1,275	63 15	260	13 0	135	6 15	100	5 0
A Fa.	100	39½	1,250	62 10	1,375	68 15	280	14 0	140	7 0	100	5 0
A G..	108	42	1,400	70 0	1,525	76 5	315	15 15	145	7 5	105	5 5
A Ga.	113	44½	1,500	75 0	1,625	81 5	325	16 5	150	7 10	105	5 5
A H..	120	47½	1,600	80 0	1,725	86 5	340	17 0	155	7 15	110	5 10
A Ha.	140	55	1,950	97 10	2,075	103 5	365	18 5	160	8 0	115	5 15
A I..	160	63	2,275	113 15	2,400	120 0	390	19 0	160	8 0	120	6 0
A Z..	210	82½	—	—	4,900	245 0	500	25 0	200	10 0	—	—

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12 ,,	,,	Sheldon and Co	,,
10 ,,	,,	Vandergrift and Co	,,
23 ,,	,,	Scovill and Adams	,,
21 ,,	,,	Dingelstedt and Co	,,
10 ,,	,,	Stiner and Co	,,
23 ,,	,,	P. Ruttmann	,,
7 ,,	,,	Merchants' Despatch	,,
15 ,,	,,	G. Gennert	,,
9 bales	Bordeaux	E. T. Molloy	,,
16 cases	Glasgow	Baldwin Bros & Co	,,
61 ,,	Hamburg	G Gennert	,,
38 bales	,,	Dingelstedt and Co	,,
9 cases	,,	A. Kraut	,,
7 ,,	,,	Knauth, Nachod & Co	,,
13 ,,	,,	Kupfer Bros	,,
6 ,,	,,	Meyer and Co	,,
20 ,,	,,	Walton and Co	,,
4 ,,	,,	De Jonge and Co	,,
62 bales	,,	To order	Philadelphia
3 cases	Liverpool	J. Ostermann	New York
47 ,,	,,	Dennison Mfg. Co	Boston
63 ,,	,,	,,	,,
11 ,,	London	Dickinson and Co	,,
17 bales	Rotterdam	Amsinck and Co	New York

MANILLAS.

15 bales	Antwerp	Salomon and Co	New York
50 ,,	,,	Jessup and Moore	,,
217 ,,	Calcutta	Ralli Bros	,,
115 coils	Glasgow	Train Smith and Co	Boston
81 ,,	Hull	Dutton & Co	,,
40 ,,	Hamburg	Salomon and Co	New York

RAGS.

149 bales	Amsterdam	Train, Smith & Co	New York
131 ,,	,,	J. Pirnie	,,
285 ,,	Antwerp	A. Kazenstein	,,
65 ,,	,,	Salomon and Co	,,
250 ,,	,,	J. Pirnie	,,
30 ,,	,,	Salomon & Co	,,
126 ,,	Glasgow	Train, Smith & Co	Boston
62 ,,	,,	E. P. True	,,
168 ,,	,,	Butterworth and Co	,,
240 ,,	Hamburg	Salomon Bros	,,
116 ,,	,,	Heidelbach Ickelheimer	,,
201 ,,	,,	Salomon Bros	New York
42 ,,	,,	Lewy Bros	,,
105 ,,	,,	Salomon and Co	,,
62 ,,	Hull	Butterworth and Co	Boston
195 ,,	,,	Ring and Co	,,
282 ,,	Liverpool	Train, Smith and Co	,,
24 ,,	,,	W. F. Corne	,,
318 ,,	,,	Train, Smith and Co	,,
349 ,,	,,	,,	,,
146 ,,	,,	Butterworth and Co	,,
81 ,,	,,	E. P. True	,,
93 ,,	,,	Wheelwright Paper Co	,,
95 ,,	London	Train, Smith & Co	New York
185 ,,	Leghorn	Castle & Gottheil	,,
231 ,,	,,	Jessup and More	,,

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107 ,,	,,	E. P. True	,,

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30 ,,	,,	Fuerst Bros	,,
58 ,,	,,	F. A. Reichard	,,
65 ,,	,,	Klipstein and Co	,,
150 ,,	Hamburg	Roessler & Hasslacher	Boston
270 ,,	Liverpool	J. L. and D. S. Riker	,,
142 ,,	,,	,,	New York

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100 ,,	,,	Kendall Mfg. Co	Boston
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THE PAPER TRADE REVIEW is a widely informed and well-managed enterprise, of great value to exporters for its exact Market Reports and statistics of Raw Material.—*Central-Blatt fur die Papier-Fabrikation*, Dresden.

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The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

VOL. XXIX. No. 24. LONDON: JUNE 17, 1898. EVERY FRIDAY. PRICE SIXPENCE.

A New System of Drying.

Claimed to be Highly Suitable for Paper and Wood Pulp.

An improved system of air drying has lately been introduced by Mr. Edward Robinson which promises to be of interest to both paper and pulp makers. The system is applicable to a variety of purposes, and we understand that it is now in successful use in many leather and other factories in this country. We have seen several reports and testimonials from manufacturers using the system, and from these it appears that good and satisfactory results are being obtained.

The accompanying illustration only shows the system as applied to loft drying, but the inventor has a variety of appliances for the treatment of different kinds of materials, including a novel arrangement of slanting trays for dealing with fibres, glue, gelatine, etc., etc., and such substances as cannot be suspended in a chamber. The system is remarkably well adapted to the drying of millboards, leather boards, and the like.

One of the great advantages claimed for the system is the economy of the patent steam heater employed. This is made by means of fitting strong steel tubes into an Archimedian spiral, the whole being enclosed in a cylindrical shell. Steam is admitted to the inside of these tubes, whilst the air drawn through by an exhaust fan B, is made to circulate round the outside of the tubes. The air thus sweeping round and round among the hot tubes has to travel about four times the outside length of the heater. Thus a small and comparatively inexpensive heater of this type, say 12 feet long by 2 feet in diameter, and only weighing about 10 cwt., will give very large volumes of dry wind heated to close upon the same temperature as the steam in the tubes, if required. By regulating the inlet of steam, however, the heat is under perfect control and can be kept at any desired point, and the best conditions of summer drying can be ensured throughout the year. Either exhaust or live steam can be used, the latter will give ample heat for the drying of paper, leather, gelatine and the like. With steam at 80 lbs. pressure the wind can be heated to 300° F. if desired. When it is necessary to disinfect air to prevent mildew, etc., this is a great advantage, especially as such results can be obtained without any special risks for insurance.

Air thus heated is blown by the fan into the air distributing pipe C. This pipe has a series of nozzles at equal distances apart along its entire length, so arranged and proportioned as to disperse a volume of wind in all parts of the building alike, as indicated by the small arrows shown in the transverse section. There are special features of novelty about this method of dispersing the wind, and it is certified on good authority that uniform drying in all parts of the room alike is secured.

We understand that the inventor has also a simple and inexpensive arrangement for applying his system to the continuous and automatic drying of paper as it travels upon the rollers, thus securing the effects of air drying combined with a very cheap and continuous process. Likewise an adaptation for drying pulp, which it is claimed is cheaper,

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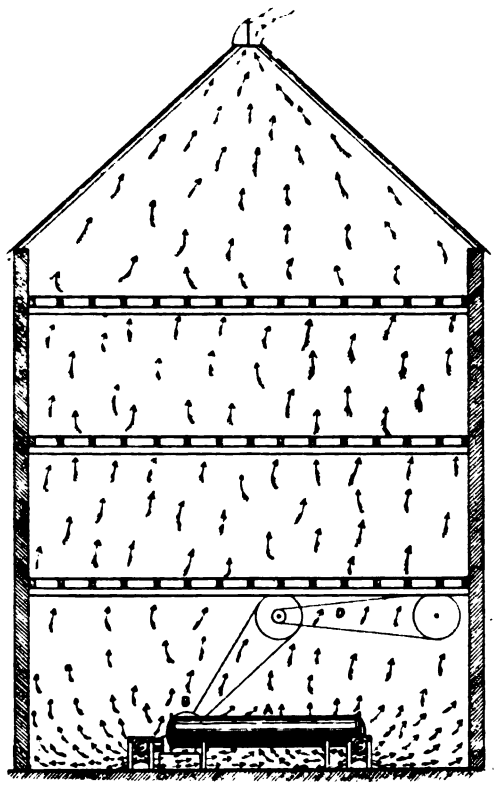
both as regards cost of plant and working expenses than most of the systems in use. Drawings to illustrate these modifications



TRANSVERSE SECTION.

Barnes, S.W., who is the inventor and patentee.

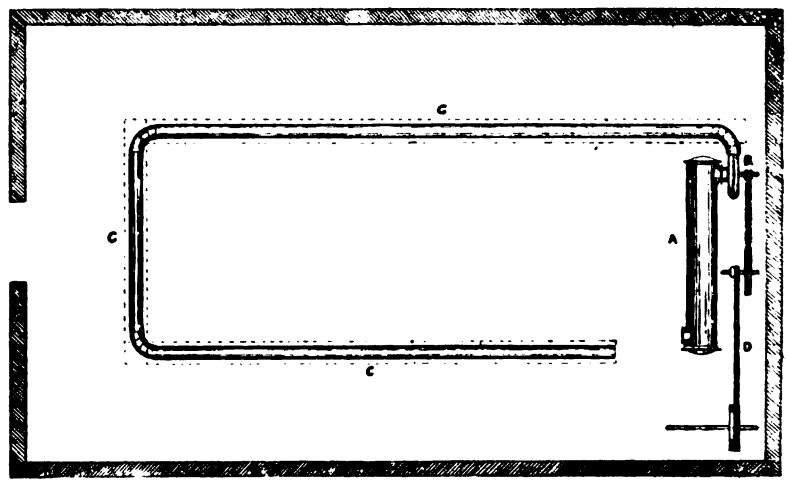
The Canadian Wood Pulp Industry.

SOME BRITISH VIEWS.

In his latest annual report Lord Strathcona, the Canadian High Commissioner in England, refers to the Canadian wood pulp industry. He has been in communication with sellers and consumers of wood pulp in Great Britain, as he mentions that Canadian sulphite pulp is greatly appreciated although certain improvements in packing, etc., will have to be studied if manufacturers wish to successfully compete with the Scandinavians.

It has been suggested to Lord Strathcona that a duty should be levied on pulp wood exported from Canada. A step of this kind, it is claimed, would stop the import of paper into England from the United States, which tends to interfere with the use of Canadian pulp by the makers here, owing to the low prices at which American paper is placed on the market.

The following communication from an English firm was received by the Canadian High Commissioner:—"We beg to say we are of opinion that a duty on pulp wood on leaving Canada would stop the import of paper into England from the United States, and give that trade to Canada. Our experience is that Canada can compete with Scandinavia in the export of wood pulp to England and hold her own, so if she can do this, she will equally as well be able to



PLAN OF GROUND FLOOR.

A- HEATER. B—FAN. C—AIR PIPES. D—DRIVING ARRANGEMENT.

are not yet ready for publication, but every information may be obtained from Mr. Edward Robinson, of 4, Castelnau Gardens,

compete with Scandinavia in the supply of paper to this country. The keenest competition in the pulp trade is to supply

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mechanical pulp for newspaper and wall paper manufacturing, and for this purpose the Canadian spruce pulp is superior. The low price at which the United States are dumping their paper on England is interfering very much with the English paper mills, and consequently with our import of Canadian pulp, so that the Americans are getting your wood, and with the manufactured paper spoiling your English demand for pulp. We have to bring the pulp over with fifty per cent. water, so that the cost of freight on the extra ton of water to each ton of pulp enables the States (by shipping paper and so saving most of this extra freight and the cost of pressing the pulp) to ruin the English mills, and consequently stop the demand for Canadian pulp. There is a grand future in our paper and pulp trade for Canada if she does not allow the States to deprive her of the full benefit of her forests."

The following is an extract from another letter received by Lord Strathcona from an English visitor to Canada:—"I must confess I was somewhat disappointed to find so few manufacturers alive to the great possibilities of a trade with this country. As a matter of fact, I found only one company making any serious and adequate efforts to meet the needs of the market. They see clearly the probabilities of a great trade, and are building very fine mills and erecting machinery capable of a large turn-out in both pulp and paper suitable for England and the Continent. Canada need fear no rival so long as wood remains the cheapest material for papermaking, and it is certainly a pity that the States are allowed to deplete her best forests for the benefit of papermakers outside Canada. It is necessary that paper and pulp should be easily shipped at Canadian ports all the year round to all the chief English and continental ports. London and Liverpool are fairly well looked after, even in winter, from St. John, but I have so far found it very difficult to get a quotation for freights from St. John in winter and Montreal in summer to Newcastle, Glasgow, Leith, Dundee, or Cardiff. All these are pulp and paper using centres readily reached from American ports, but not in direct touch to any appreciable extent with Canada. If something could be done to arrange for regular sailing between Canada and these ports, business would be materially helped."

A consumer of wood pulp wrote to the High Commissioner as follows: "We beg to say that we have done a fairly large business in Canadian wood pulp. Large contracts have been made with some of the United States wood pulp mills, but we find that as soon as trade looks up in the latter country they do not carry out their arrangements as to delivery. So far we have not had this difficulty with the Canadian contracts, and for this reason we are anxious to encourage the Canadian business. We understand that an immense quantity of wood for pulp making purposes is sent from Canada to the United States, and that several attempts have been made to put a duty on it. If this were done we are strongly of the opinion that it would encourage the wood pulp making industry in Canada and foster the trade between that country and our own."

Lord Strathcona mentions that he is communicating with the Board of Trade with the view to the importation of wood pulp from Canada being shown in the official trade returns, as he is sure this would do much to extend Canadian trade in the United Kingdom.

Evolution of Digesters.*

By Martin Griffin.

(*Continued.*)

We now come to the last chapter on lead lining. Lining digesters with sheet lead was recognised as a very unsatisfactory method, if not a failure, for the reason that no one had been able to devise means for holding it in place, and keeping it from buckling and cracking. If anyone could be found who could accomplish this, there were those who were still willing to put their money into it.

In 1882, one James Anthony Graham, of London, patented a process for covering iron with any thickness of lead, by a process of cleaning the surface of the iron, heating and covering the same with a flux of zinc chloride, and applying molten lead—in other words, a solder attachment. It seems a little strange that such a patent should have been granted when the manufacture of terne plate had been known so long.

In 1886, one George R. Noble, at that time a resident of England, conceived the idea of constructing digesters with sheet iron covered with lead, according to the Graham process, and was granted a patent therefor. A company was organised to operate what was known as the Graham process, and the title, Globe Sulphite Boiler Company, was selected as appropriate.

The company expected to build both rotary and stationary digesters. The first rotary revolving on trucks, as Francke's, was 7½ feet by 22 feet. Later digesters, 8 feet 4 inches by 32 feet 6 inches, were built, the latter producing about 7,000 pounds of pulp to each cook. It was constructed by rolling and assembling the sheets covered with about one-half inch of lead after Graham's patent. The seams were then cleansed, filled in, and burned with the soldered lead coating. The greatest care was taken to obtain the purest Spanish lead and to make the interior surface smooth. At the time I do not know that any importance was attached to the galvanic action due to contact of different metals or the alloying of the flux with the lead. I have reason for believing that it was not even thought of.

Just here are some very interesting points which in this connection were ably pre-

* A paper read by Mr. Martin Griffin before the New York Section of the Society of Chemical Industry (U.S.A.).

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sented by my friend, Major Michaelis, in the paper above referred to. I quote from his paper: "Although the promoters of this process do not so call it, it is, nevertheless, soldering, which is authoritatively defined to be 'the process of uniting two pieces of the same or of different metals by the interposition of a metal or alloy, which, by fusion, combines with each.'"

Here the metals to be united are lead and iron; the "metal or alloy" is zinc, or zinc and lead, I emphasise this simple matter because it is claimed that in the Graham process the two metals are united by a special alloy of lead and iron. I quote from the company's expert: "Our boiler obviates the defects, and overcomes the difficulties and repairs and constant inspection to which ordinary lead lined boilers are liable. This is because the lead is united to the iron or steel, uniformly by means of an alloy at the point of junction between the steel and lead, and the crystals of the two metals are intimately mixed at that point, so much so that it is impossible with a cold chisel to cut the lead away from the iron or steel without still leaving a thin surface of lead. The junction alloy of steel and lead has also a greater breaking strain than lead itself, it having been subjected to breaking tests."

A standard authority states that "an alloy is a combination by fusion of two or more metals, as brass and zinc, tin and lead, silver and copper, etc." Hence to speak of the "junction alloy of steel and lead" is incorrect, for in the coating operation there is not even an approximation to the melting point of iron.

The alloy of lead and iron appears to be almost unknown in the arts; and that this so-called "junction alloy of steel and lead," or, as I think, of zinc and lead, should possess a greater tensile strength than the lead, is not strange; it is not an unusual property of alloys; thus one consisting of twelve parts lead and one part zinc has six times the tenacity of lead.

I must also put on record my lack of faith in the natural inference that would be drawn from this claim that the two metals (iron and lead) are intimately mixed at this point (the junction of cementation surface), "so much so that it is impossible with a cold chisel to cut away from the iron or steel without still leaving a thin surface of lead." Under favourable circumstances the lead can be "peeled" from the iron—I have done it myself.

I examined the Graham process after the Ritter-Kellner at Cornwall, and it struck me at once as a logical consequence that, if "tacking" the lead on in places only, gave satisfactory results, then complete cementation ought to do even better. Upon reflecting, however, I modified this hasty conclusion, for the governing conditions in the two processes are entirely different. In the Ritter-Kellner the lead is burned to the circular and vertical tenons.

Burning is defined as "joining metals by
elting their adjacent edges and running
o the intermediate space some molten
metal of the same kind." A well-known writer says: "The articles burned together being homogeneous, the parts expand and contract evenly by changes in temperature. The solders have a greater range of expansion by given changes of temperature than metals they connect.

"The solders oxidise more or less freely than the metals they connect, and establish galvanic circuits which destroy the integrity of the joint, especially in the presence of heat, moisture or acids." One would almost suppose the author had sulphite digesters in mind.

In the Ritter-Kellner there is little danger of the joint loosening. In the Graham, under periodic expansion and contraction and galvanic action, I should fear a sundering between the lead and iron; if this did take place the boiler would very soon become unserviceable. Even granting the claim that the lining and sheet are indissolubly connected by an alloy of lead and steel, and that the "lead, being the weaker metal, when fastened homogeneously to the iron or steel, has to obey the expansion and contraction of the iron or steel," there still remains an apparently insuperable difficulty. The lead lining is at least half an inch thick, and even supposing that the cylindrical laminæ in homogeneous contact with the iron are docile, and move in military cadence, with their inseparable stronger companion, yet the balance of the lead must be subjected to a recurring ebb and flow for which no compensation is provided. I quote from the German expert:—

"The explanation of the iron controlling the lead expansion is easy to understand. Lead is a very malleable metal, its crystals fitting loosely together, *i.e.*, there is comparatively a large space between the crystals as against other metals, and if the crystals of lead were counted over 22 feet (the length of the digester), and the number divided into one-third of an inch (the linear expansion of lead for 90 degrees in 22 feet) it would be found that the fractional part of the one third inch would be considerably less than the space between each crystal, and there is no chance of one crystal pushing another one, as in metals where crystals are closer together."

On this theory I do not understand why lead should expand measurably under ordinary increase of temperature. Further, the common experience of every plumber militates against the correctness of the assumption. Lead pipes for hot water will "creep" under fluctuation of temperature without perceptible increase of length; this is very evident when the pipe under a metallic clamp is examined; a burnished band is seen protruding beyond the clamp. I have seen this in less than twenty-four hours after brand new pipes were installed.

(To be continued.)

Continental Opinion of the WORLD'S PAPER TRADE REVIEW: "I take this opportunity to speak out that your Journal has NO EQUAL of its kind in all countries—I remain, yours faithfully, M. BEHRKND. Prince Bismarck's Paper Mill, Varzin, Germany.

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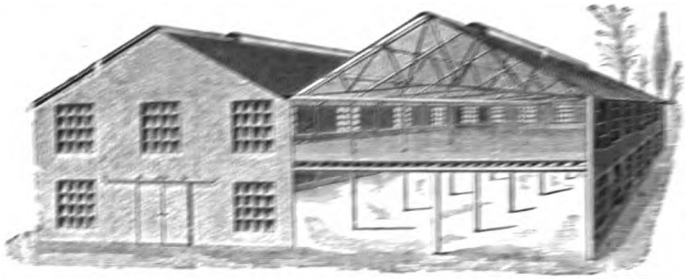

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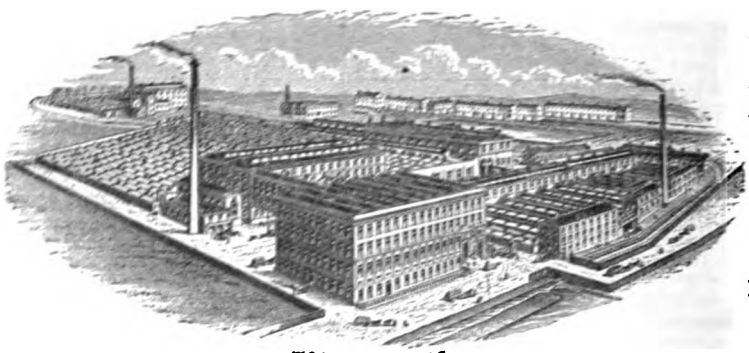

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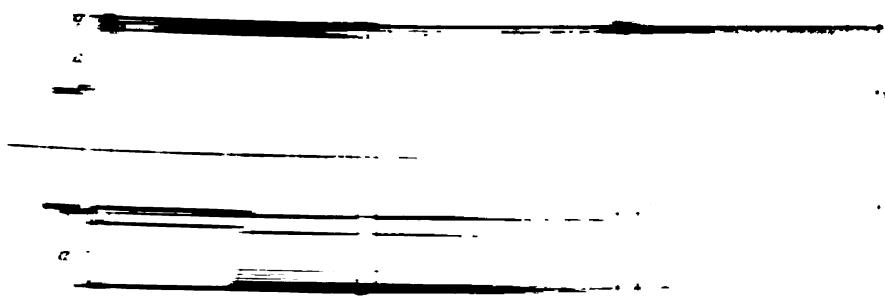

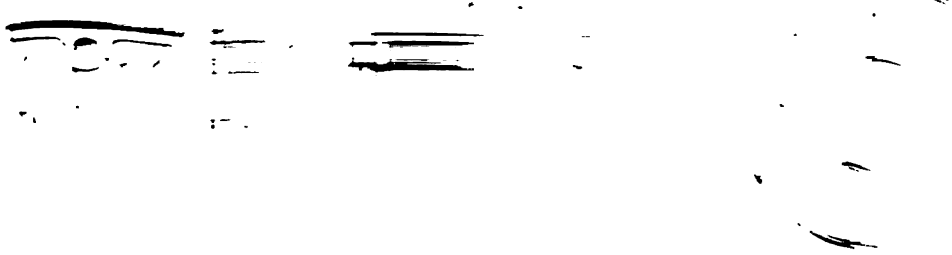

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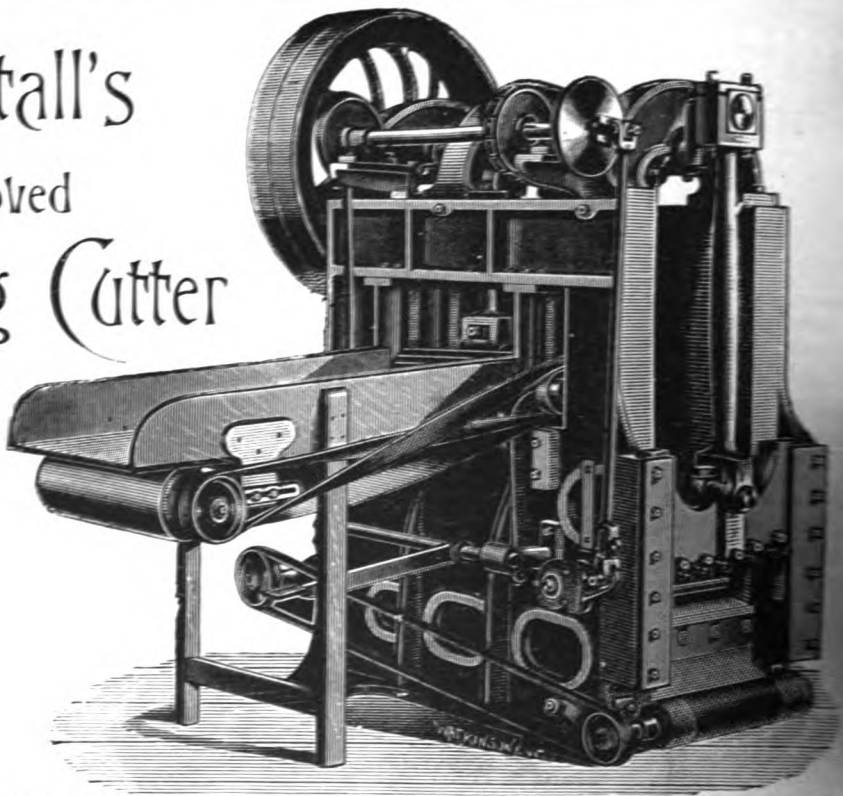

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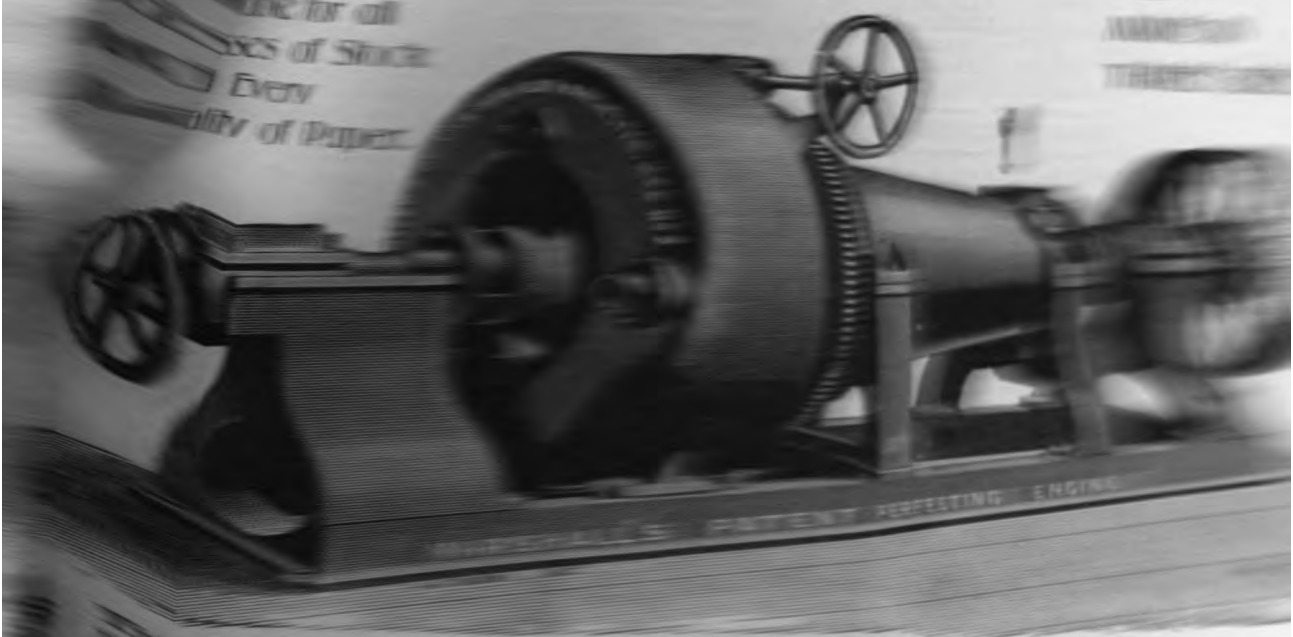

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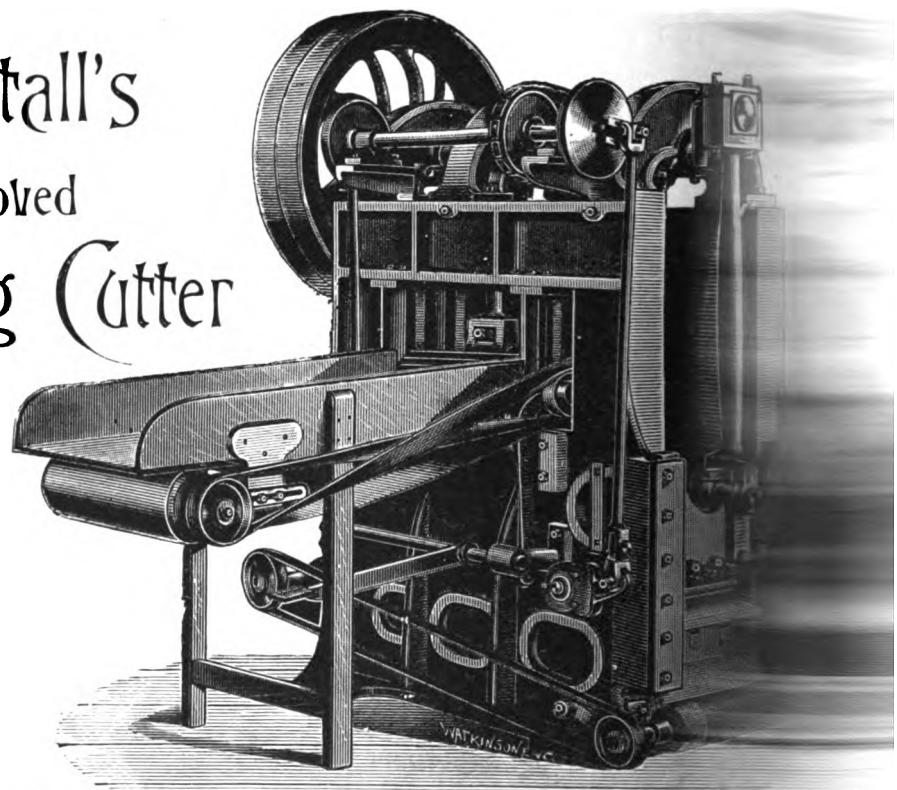

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American Imports & Exports of Paper

The following official figures—recently issued—show the American imports of "paper and manufactures" for the month of March of this and the previous year:—

From	1897.	1898.
United Kingdom... ...	$67,440	$48,637
Belgium	9,505	6,205
France	20,307	27,368
Germany	135,136	135,999
Other Europe	852	3,675
Japan	18,456	23,095
Other countries	6,573	2,440
	$258,269	$247,419

The figures showing the import of paper and its manufactures for the nine months ended March, 1897 and 1898, are as follows:

	1897.	1898.
United Kingdom... ...	$437,136	$386,052
Belgium	52,571	44,284
France ...	140,737	179,440
Germany	1,351,614	1,316,534
Other Europe	2,371	39,260
Japan	149,094	140,957
Other countries	56,519	25,422
	$2,190,042	$2,131,949

The exports of paper continue to show a largely increased movement. The values for March were as follows:

	1897.	1898.
Paper hangings	$18,374	$26,638
Printing paper	*a*	248,234
Writing paper and envelopes	10,122	10,284
All other	277,613	225,005
	$306,109	$510,161

The exports for the nine months ended March were as follows:

	1897.	1898.
Paper hangings	$72,808	$141,356
Printing paper	*a*	2,078,228
Writing paper and envelopes	76,016	128,027
All other	2,066,393	1,751,144
	$2,215,217	$4,098,755

a Not separately stated prior to July, 1897.

The imports and exports of paper for a series of years are shown in the following table:

	Imports.	Exports.
1888	$2,400,790	$1,078,561
1889	2,542,383	1,191,035
1890	2,816,860	1,226,686
1891	3,031,454	1,200,169
1892	3,342,304	1,382,251
1893	3,880,981	1,540,886
1894	2,628,351	1,906,634
1895	2,863,533	2,185,257
... ...	3,169,480	2,713,875
... ...	3,121,530	3,333,163
s.)	2,131,949	4,098,755

British Imports of Wood Pulp.

The following figures show the total imports of wood pulp into Great Britain during May and Jan.-May of the years given:—

May	1898	29,830 tons	£138,577
,,	1897	34,318 ,,	181,689
,,	1896	29,304 ,,	150,700
Jan.-May	1898	152,254 tons	£723,166
,,	1897	148,447 ,,	744,365
,,	1896	119,572 ,,	610,654

The imports from Norway last month included "chemical" 9,435 tons of the value of £53,308, and "mechanical" 11,160 tons of the value of £28,556. During Jan.-May, the imports of "chemical" amounted to 37,188 tons of the value of £234,326, and of "mechanical" to 53,764 tons of the value £138,064. Total arrivals from Norway:—

May	1898	20,595 tons	£81,864
,,	1897	20,920 ,,	84,158
,,	1896	16,510 ,,	67,638
Jan.-May	1898	90,952 tons	£372,390
,,	1897	104,503 ,,	423,232
,,	1896	85,209 ,,	371,840

From "other countries" the receipts of "chemical" amounted to 6,101 tons of the value of £44,867, and "mechanical" 3,134 tons of the value of £11,846. During Jan.-May "chemical" was received to the extent of 28,456 tons of the value of £217,492, and "mechanical" 32,846 tons of the value of £132,284. The following figures show the total imports from "other countries" (including Sweden):—

May	1898	9,235 tons	£56,713
,,	1897	13,308 ,,	97,531
,,	1896	12,794 ,,	83,062
Jan.-May	1898	61,302 tons	£350,776
,,	1897	43,944 ,,	321,133
,,	1896	34,363 ,,	238,814

THE METROPOLITAN PAPER CO., LTD.—A meeting of the members of this company is called for the 4th of July at 76, Coleman-street, E.C., when an account will be submitted relating to the winding up proceedings and the manner in which the property of the company has been disposed of. Mr. Henry Spain, the liquidator, will be present to give any explanation that may be demanded.

THE United States and China-Japan Steamship line, which will operate between New York and the Orient, is now at work. The steamers of this line will stop at Gibraltar, Malta, Port Said, Aden, Colombo, Singapore, Hong Kong, Shanghai, Nagasaki, Moji, and Yokohama, the trip occupying about sixty-five days.

PAPER WASTE was imported at Ghent last year to the extent of 1,553 tons, the quantity for the previous year being 1,893 tons.

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G. HARTMANN,

CHRISTIANIA, NORGE, Dronningens Gade 13.

TELEGRAFADR: HART, CHRISTIANIA. TELEFON: 72. RIGSTEL: 85.

Aktiebolaget G. HARTMANN'S Maskinäffär,

STOCKHOLM, SVERIGE, Vasagatan 5.

TELEGRAFADR: HART, STOCKHOLM. RIKS TELEFON: 1793. ALLM. TEL 8309.

KONSULTERANDE INGENIÖR FÖR
Pappers-Trämassa och Cellulosefabriker.

LEVERERAR ALLA FÖRNÖDENHETER TILL
Pappers-Trämassa och Cellulosefabriker.

Agentur i Sverige & Finland:

J. & A. JENSEN og DAHL, Christiania.
Maskineri för Sågbruk, Hyflerier, Snickerier, Kvarnar, Trämasse och Cellulosefabriker, Angpannor, Angmaskiner, Turbiner, Transmissioner, Linbanor och Hyfveljern.

H. FÜLLNER, Warmbrunn, Schlesien.
Pappersmaskiner, Holländare, Kollergängar, Skärmaskiner, Callandrar, Levererat i Sverige och Norge 22 st. Pappers & Torkmaskiner.

THOS. HARDMAN & SONS, Fernhill, Bury.
Fritar för Trämasse & Pappersfabriker.

LOUIS LANG & SOHN, Schlettstadt.
Metallduk för Trämasse och Pappersfabriker.

PETER SPENCE & SONS, Manchester.
Alunkakor för Pappersfabriker.

JENSEN & GLAD, Köpenhamn.
Bornholms Kaolinlera.

NILS AALL, Ulefos, Skien.
Flusspat för Gjuterier.

MICHEL'S HANFRØSTE und SEILFABRIK ACTIENGESELLSCHAFT.
Transmissionslinor af Hampa med regulerbar Linlås.

Agentur i Norge:

H. FÜLLNER, Warmbrunn.
Papirmaskiner, Hollændere, Kollergange, Skjæremaskiner, Calandere, m. m. (Leveret i Norge og Sverige 22 Stk. Papir-og-Törremaskiner).

THOM. JOS. HEIMBACH, Düren.
Filter for Trœmasse- og Papirfabrikker.

LOUIS LANG & SOHN, Schlettstadt.
Metaldug for Trœmasse- og Papirfabrikker.

PETER SPENCE & SONS, Manchester.
Alumcakes for Papirfabrikker.

SCHÄFFER & BUDENBERG, Buckau-Magdeburg.
Dampkjedel- og Maskinarmatur.

REINICKE & JASPER, Cothen.
Knotenfangere, roterende og plane.

G. GROLMAN Dusseldorf.
China Clay.

JENSEN & GLAD, Kjöbenhavn.
Bornholms Kaolin.

MICHEL'S HANFRØSTE und SEILFABRIK ACTIENGESELLSCHAFT.
Transmissionstauge af Hamp med regulerbar Taugforbinder.

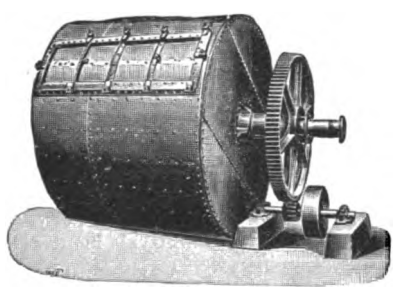
C. BACHE-WIIG & E. MORTERUD'S

Patenterade Barkningsmetod af Träkubb & Pappersved

(BARKCLEANING CYLINDERS FOR PULPWOOD).

Apparater äro Levererade till Följande:

Franö Nya Aktiebolag ...	4
Lottefors Trämassefabrik...	1
Jössefors Aktiebolag ...	2
Brättne Trämassefabrik ...	1
Aktiebolaget Walkiakoski	1
Böhnsdalens Trämassefabrik	6
Embretsfos Sulfitfabrik ..	4
Hunsfos Fabriker	2
Tornator Trämassefabrik...	2
Hafslund Trämassefabrik...	1
Treschow-Fritzöes Fabrik	1
Sörfors Trämassefabrik ...	1
Lövenskiold Fossum ...	2
Drammenselvens Fabriker	1
Union Co.	2
Ranheim Fabrik	1



Foreign Applications Attended to by:

Great Britain and Ireland:
Messrs. CHRISTOPHERSEN, ANDREWS & Co., 91, Queen Victoria Street, London, E.C.

United States:
Messrs. FREDERICK BERTUCH & Co., Temple Court Building, Room 308-10, New York.

Belgique & France:
Messrs. LAMMLETH & CORNET, Anvers.

Deutschland und Oesterreich:
H. FÜLLNER, Warmbrunn, Schlesien.

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Electrolysis.

THE HARGREAVES-BIRD PROCESS.

The Hargreaves-Bird process for manufacturing alkali and bleaching powder has been steadily developed by the General Electrolytic Parent Co., Ltd., at Farnworth, near Widnes, and as the results obtained are considered to be highly satisfactory, preparations are now being made to carry on manufacturing operations on a large scale. Reports have recently been received by the company from Messrs. Cross and Bevan, papermakers' chemists, and Professor William Ramsay, LL.D., F.R.S., D.Sc., etc.

Messrs. Cross and Bevan point out that since their previous examination some two years ago, considerable advances have been made, mainly in the directions of increased size of cell and greater electrical efficiency. To quote from their report:—"The present effective area of a single cell is 100 square feet. Not only is the cell remarkable for its area and electrical efficiency, but the amount of current that you are able to utilise is large, viz., 23 amperes per square foot of surface. The process of decomposing salt goes on automatically, requiring a minimum of attention. Chlorine gas of a high degree of purity passing regularly from the anode chamber to the bleaching powder chambers, and a constant stream of a strong solution of carbonate of soda flowing from the cathode chambers. The purity of the carbonate of soda solution is such that it yields by direct evaporation an ash containing 57·14 per cent. of real alkali (Na_2O). Each cell is capable of producing, per annum, 37·95 tons of soda ash, and 68·7 tons of bleaching powder, containing 37 per cent. of available chlorine, or 65·27 tons after allowing for a loss of 5 per cent. chlorine. On a basis of 250 cells, which we understand you propose to erect, the total output would be 9487·5 tons of ash, and 16,317·2 tons bleach. Taking these at their present value of £4 10s. and £5 respectively, the total value of the products from 250 cells amounts to £124,279 15s. per annum. The theoretical yield of pure soda ash from a current of 2,294 amperes for one hour is 9·976 lbs.; the amount actually yielded during our inspection was at the rate of 9·705 lbs. From these figures we obtain the remarkable electrical efficiency of 97·28 per cent. By far the most important item in the cost of production is that of electrical power. From the practical experience of electrical engineers this may safely be taken to cost ¼d. per electrical horse-power hour. Each cell takes a current of 2,294 amperes. The mean pressure at the dynamo when we investigated the process was 4·71 volts. At the cell it was only 3·94 volts, but even taking the higher figure, which might be considerably reduced with a large installation, we find that each cell requires 14·4835 electrical horse-power. At ¼d. this amounts to a total cost for power of £33,040 14s. 3d. for 250 cells per annum. The difference between this sum and £124,279 15s. leaves a very large margin for other charges."

From Professor Ramsay's report we extract the following:—"The main difficulty which has, up to now, attended the electrolytic processes of manufacturing soda and chlorine, is that the current, besides decomposing the salt into soda and chlorine, has also decomposed some of the soda, yielding oxygen and hydrogen; and the oxygen has converted the salt, to some extent, into hypochlorite and chlorate of soda, two undesirable products, for their production entails loss of current and the contamination of the soda. This difficulty is wholly avoided in the Hargreaves-Bird process. Careful experiments, made by me on the spot, have shown that 97·28 per cent. of the electric power is utilised in producing carbonate of soda and chlorine. I regard this as a most astonishing result. As both soda ash and bleaching powder are produced by this process, it is necessary to consider these products together. Calculation shows that if no waste of chlorine occurs in the manufacture of the bleaching powder, one ton of the products will consist of 795 lbs. of carbonate and 1,445 lbs. of bleach. I am informed on the best authority that in quantities, the total cost for an electric horse-power-hour, including salaries and maintenance, should not exceed 0·25d., supposing say 1,000 horse-power or more working say 130-150 hours per week. From measurements made by myself at Farnworth of the electric horse-power required to produce a known quantity of soda (taking the voltage measured at the dynamo, and not at the electrolytic cell), the cost of the mixed products, soda and bleach, comes to £1 4s. 10d. per ton. This figure, of course, refers to the cost of the current alone. The selling price of the same quantities of soda ash and bleach, at £4 10s. and £5 a ton respectively, is £4 16s. 6d. The margin is £3 11s. 8d. But the soda ash made by this process would have to compete, not with ash at £4 10s. a ton, but with soda ash made by the ammonia soda process, the cost of manufacturing which probably does not exceed £2 10s. a ton. The margin, in that case, would be £2 19s. 2d. a ton. The only part of the plant which will require renewal, apart from ordinary wear and tear, is the porous partitions. These are constructed of a silicate composition, on a basis of asbestos fibre; I have seen one made, and have satisfied myself that the operation is a very simple one, and requires no great expenditure of time, labour, or money. I am informed that it is found advisable to renew these partitions about once a month. The operation of replacing an old partition with a new one is also one which demands little time or trouble. The soda produced is of high purity. The sample which I examined from that which I saw produced contained only 1·02 per cent. of salt. The complete analysis is as follows:—

Carbonate of soda	...	97·69 per cent.
Sodium chloride...	...	1·02 ,,

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Sulphate of soda...	...	0·77	,,
Sulphite of soda...	...	0·52	,,
		100·00	

My opinion is that this process is one of the most beautiful I have ever seen; and I think that it is destined to prove a great commercial success."

The Late Mr. Daniel Bentley.

In our last issue we briefly referred to the death of Mr. Daniel Bentley, formerly of the firm of Messrs. Bentley and Jackson, Lodge Bank Works, Bury. The funeral took place at Bury, on Thursday, last week. The mourners were Mr. John Bentley and Mr. George Bentley, sons; Mr. James Hamer, Mr. John Highton (Bolton), and Mr. John Jones (Bolton), brothers-in-law; Mr. Arthur Bentley, nephew; Mr. John McNary, nephew, and manager of the Lodge Bank Works; Mr. James Nuttall, a director of Messrs. Bentley and Jackson; Mr. Peter Smith; and Mr. Lawrence Ashworth, farmer, of Huncoat. The coffin was of oak, panelled, with brass mounts, and the breast plate bore the inscription "Daniel B. Bentley, born August 19th, 1829, died June 6th, 1898." Messrs. Joseph Edwards, James Baron, Hiram Suthurst, and James Alty, employees at Lodge Bank Works, acted as bearers. Among those present at the cemetery were Mr. William H. Smith, assistant manager at Lodge Bank Works; Mr. Harry Bennett, foreman turner; Mr. Harry Dearden, foreman fitter; and Mr. John Nuttall. There were no floral tributes (by request).

Mr. Daniel Bentley, in early life was apprenticed to Mr. James Parks, who owned a foundry for the making of papermaking machinery. For some time after completing his term of apprenticeship Mr. Bentley worked in Bolton, and later on became mechanic, and eventually foreman mechanic, in Messrs. Wrigley's paper mills, Bridge Hall. He was possessed of unusual mechanical skill, and thoroughly understood the papermaking branch of mechanics.

Mr. Bentley was the virtual founder, about the year 1860, of the firm of Bentley and Jackson, which had its origin in a small part of the now extensive works in Lord-street. With him were associated for a short time James Redfern and Peter Smith. After a while, however, these two partners left the firm and started another concern, with a Mr. Law, under the style of Redfern, Smith, and Law. Mr. Bentley, with several others, kept on with varying success the works with which he was associated, and in the latter sixties he was joined by the late Mr. J. B. Jackson and the late Mr. Foye. The latter died shortly after this new partnership was effected.

There were many difficulties to contend with at the outset, but the mechanical skill of the one partner and the commercial instincts of the other, combined with the indomitable energy of both, triumphed over all obstacles, and the firm began to grow in earnest. When Mr. Bentley started in business on his own account he had but one lathe. At the present time the firm which he had founded are amongst the largest makers of papermaking machinery in the United Kingdom, probably in the world.

Mr. Bentley gave up his connection with the business, owing to failing health, some thirteen years ago. He lived at St. Annes and Buxton and other places for short periods, and ultimately settled down at Huncoat, where he had a farm. Deceased leaves two sons, Mr. John Bentley and Mr. George Bentley, both of whom are directors of Bentley and Jackson, Ltd.

"A Pernicious System."

To the Editor of the WORLD'S PAPER TRADE REVIEW

SIR,—I am glad to see your article upon the subject of tipping paper mill employees, but hope that the procedure has not grown into a custom in this generally fair-minded trade. I send you a specimen of these applications, upon which you will observe I was mulcted for unpaid postage. I have not been much troubled in this connection, and if I had I should not have satisfied the applicant's wishes, as I could not afford it at my own expense, and the mill would pay in the end if I did respond favourably. When I commenced to do business with paper mills I was told by a confrère, an old hand in the trade, that I should make no headway unless I was generous in the matter of "palm oil," and that in directions where one would least expect it to be looked for or taken. I may have done less business by adhering to my moral commercial code, and I might have done more by working on the other principle: certain it is, I don't understand some things that have happened not to the advantage of business from my point of view. Go on, Sir, and do your best to promote clean systems, and let the meanest employee be taught the nobler part of holding up his head in manly independence, and not to sell himself and his judgment, which should be used to serve his employer, for one day's pauper's pleasure. Even this, Sir, tells for or against the best interests of the whole community.—Yours, etc.,

W. J. F.

The following is a copy of the letter enclosed, the printed memo. used bearing the name of a firm working a mill in Bucks:—

SIR

our men has Started another Excursion fund for a days outing and any Tips Thankfully received from our friends we deals with will go to that fund trusting you will faviour us I remain

Your oby

—. ———

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Electrolysis.

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Robert Stobie, the son of an old soldier, had two years boy's service in the 11th Hussars, and was discharged by purchase. He re-enlisted in the 49th Foot, and was with the regiment through the China War of 1841-43. Returning home, he volunteered into the 39th, and embarked for India in 1844, and was wounded in the leg at Maharajpore. He was then sent home, but was again embarked for the Crimea, and had 18 months in the trenches, where he was shot through the shoulder and lost the power of his left arm. He is in possession of the China Medal and four clasps, Indian Maharajpore bronze star, and the Crimea and Turkish medals.

The photograph of the group has given great satisfaction to the inhabitants of Penicuik.

U.S.A Tariff Decisions.

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17,992.—Manufactures of paper, from Erzegebirgische Lapenschrim Fabrik, Etterlein : shades No. 200, assorted, entered at 10·80m, per gross, no advance, discount 2 per cent. ; deduct freight to Hamburg.

18,023.—Surface coated paper, from Coloured Paper and Glue Manufacturing Company, Aschaffenburg, April 14, 1898 White photographic paper, 20 by 25 inches entered at 56 marks per 1,000 sheets. N advance. Discount, 3 per cent. Add case

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

ON another page we publish some statistics dealing with the exportation of American paper, which show that the trade has developed enormously since 1888. The latest figures cover the month of March, the value of the exports being 510,161 dols., against 306,109 dols. for the corresponding period of last year—a gain of over 66 per cent. The records for the nine months ending with March in each year were: In 1898, 4,008,755 dols.; in 1897, 2,215,217 dols. The gain in 1898 was no less than 85 per cent. No doubt during the last few months the figures will show a decline, as the home demand has been so enormous, and prices have paid manufacturers better than exporting.

THE BRITISH WALL PAPER CO., LTD.—The prospectus of this company has been issued, the nominal share capital being £300,000 in 30,000 six per cent. cumulative preference shares and 30,000 ordinary shares of £5 each, with an issue of £100,000 of four-and-a-half per cent. debenture stock. The company has been established to amalgamate several British firms and companies now engaged in the manufacture of wall-papers. With that object agreements have been entered into by the company for the purchase of the businesses and works of the following firms and companies:—Mitchell, Arnott and Co., Limited, Golborne, Lancashire, Dublin, and Belfast; W. G. Wilkins and Co., Limited, Derby; Walker, Carver and Co., Limited, Pendleton; David Walker, Middleton; and Heywood Paper Staining Company, Heywood.

PAPER MILL EFFLUENT.—The proprietors of the Horton Kirby Paper Mills have lately applied for permission for an enlarged outlet into the sewer, and considerable opposition is being met with from the West Kent Main Sewerage Board, who state that they have experienced no little difficulty in connection with this mill, and that the Board have several times been warned by the Thames Conservancy. The Board further state that they are prepared to take every legal step to prevent any additional refuse from this mill being discharged into their sewers so long as the proprietors decline to previously treat it in a proper manner.

BI-CHROMATE OF POTASH.—We have received further correspondence on the subject of rendering paper waterproof by a solution of glue "made insoluble with bi-chromate of potash." One correspondent states that an inquiry as to the condition of chromate workers will show that in spite of great precautions the skin of the hands and other parts which come into contact with the chromate break out into sores which are very difficult to heal. "I had a hole," he says, "in one of my fingers so that I could see the very bone. It has healed up now, but there is a deep scar on the spot. The medicos could give no help beyond advising a cessation of the work, so I had to cast about for something for myself, and found it in a ferric soap produced by mixing a solution of pure curd soap with per-chloric of iron, and using it as a plaster over the sores. If the effects are so severe on the surface where the sores can be got at and treated locally, what must the effect be on the internal organs where you can only guess what is the matter and it is impossible to apply local remedies?"

BRUNNER, MOND AND CO., LTD.—At Winnington Old Hall, Northwich, in commemoration of the 25th anniversary of the establishment of Messrs. Brunner, Mond and Co., the directors recently gave a complimentary banquet to Sir John Brunner, M.P., and Dr. Ludwig Mond. Nearly all the directors and staff were present, and the function was a brilliant one. Mr. John Crosfield presided. Mr. Ernest Solvay, founder of the renowned chemical process, specially journeyed from Brussels to attend, and proposed success to the firm. Sir John Brunner and Dr. Mond gave an interesting retrospect.

THE CLOG SOLE AND WOOD FIBRE CO., LTD.—Before Vice-Chancellor Hall at Liverpool, on Monday, a petition was heard for the winding up of this company, which carries on business at Bootle under the supervision of the court. Mr. Durandu said he appeared for the company. They had opposed a compulsory order, but the shareholders having met and passed a resolution for a voluntary winding up, he was prepared to support the application for a supervision order. Mr. Hughes said that in accordance with recent decisions he had to ask that the order should direct that any costs or remuneration to the liquidator should be subject to taxation, and that the liquidator should make a periodical report. The Vice-Chancellor thought a half-yearly report would be quite sufficient, with leave to report in a shorter time if in the interval the estate should be completely wound up. Order accordingly.

MR. THOMAS ARMSTEAD, who, as previously mentioned in these pages, lately severed his connection with the Gigg Mills to take up the management of Messrs. Thos. Owen and Son's Ely Paper Mills, Cardiff, was recently the recipient of a present from the workpeople at the Gigg Mills. The present consisted of a massive black marble timepiece, and bore the inscription "Presented to Mr. Thomas Armstead by the workpeople at Gigg Paper Mills, as a token of esteem, June 8th, 1898." The presentation took place in the salle of the mills in the presence of the workpeople. Mr. John Cronshaw, who made the presentation, referred to Mr. Armstead's eighteen years' connection with the Bury Papermaking and Manufacturing Company, and spoke of the energy and attention which characterised his efforts in the interests of the company during that period. He also alluded to the good feeling which existed between Mr. Armstead and those under his control, and expressed a hope that his new

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appointment would prove satisfactory to him. Mr. Armstead, in accepting the gift, thanked the donors for their kindness, and acknowledged the assistance he had received from the workpeople.—On the occasion of Mr. Armstead's recent marriage, a number of handsome gifts were given by members of the paper trade.

FOREIGN PAPER RE-EXPORTED.—The following statistics show the total re-exports of foreign paper from British ports:—

May,	1898	6,491 cwts.	£5,184
,,	1897	11,184 ,,	8,853
,,	1896	10,248 ,,	6,658
Jan.-May,	1898	37,505 ,,	30,631
,,	1897	38,980 ,,	33,667
,,	1896	37,913 ,,	27,415

EXPORTS OF PAPER HANGINGS.—The following statistics show the exports of paper hangings from Great Britain:—

May,	1898	6,002 cwts.	£14,139
,,	1897	5-808 ,,	13,041
,,	1896	6,737 ,,	14,851
Jan.-May,	1898	37,075 ,,	92,557
,,	1897	35,923 ,,	85,226
,,	1896	35,772 ,,	84,406

Veteran Papermakers.

Some interesting particulars appear in a Scotch contemporary relating to a remarkable photographic group of twenty-five veteran papermakers. It appears that at the suggestion of a gentleman in Penicuik, Mr. J. Adderley, photo artist, secured a beautiful group of 25 old men, past and present employees at Valleyfield Paper Mills. The ages of the first 20 of the group vary from 70 to 85, and amount in the aggregate to 1,524 years, or an average of 76 years for each man, while their employment with the firm varies from 30 to 60 years and totals up to 849 years, giving an average of 42 for each. Ten have an average of 52 years.

The names of the first 20 veterans are—John M'Intosh, Andrew Muir, John Wilkinson, John Cairns, Alexander Pitullo, William Simpson, Alexander Veitch, James Thomson, John Laidlaw, Peter M'Nab, John Thomson, Robert Stobie, Thomas Hamilton, Robert Menzies, William Gildawie, James Skinners, George Cleghorn, John Rattray, Alexander Ramage, and Thomas Tait. Had it been possible to have secured the presence of other old employees, whose frailty prevented them from being on the ground, the numbers on the group would have been considerably increased, and the average age and service would have reached a higher figure.

John Mitchell and Richard Armstrong, engineers, are still present at the works, and are both over four score, and have each a service of at least 42 years, while those still in the employment of the firm of Alexander Cowan and Sons, Ltd., under the age of 70, with a service of at least 40 years, are very numerous.

Amongst the twenty are two who have also served their Queen and country in foreign lands. John Rattray, a native of Cupar Fife, joined the 93rd (Argyle and Sutherland Highlanders) in 1846 when 18 years of age, and landed in the Crimea on 14th December, 1854. He was present at the battle of Alma six days after landing, and formed one of the thin red line at Balaclava, and also took part in the siege and fall of Sebastopol; was present at the relief and capture of Lucknow under Sir Colin Campbell, and in the Frontier War at Umballa in 1862-63. He has five medals—the Crimea and three clasps; Alma, Balaclava, Sebastopol, the Turkish and Indian Mutiny, and two clasps, the Frontier Medal, and long service and good conduct medal. He was made drum-major in 1855 in front of Sebastopol and retired with that rank in 1868. Besides his medals he has his papers for nine minor engagements.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

TWO MORE steamers, with entire cargoes of wood pulp are on their way from Canada and Newfoundland to Manchester. One is the steamer "Louisiana" of 2,460 tons capacity, from Chicoutimi, and the other is the "Lucerne," from Black River to Manchester. Both cargoes represent the first shipments of two large pulp mills that have recently commenced manufacturing.

REPORTS from Scandinavia are rather conflicting. On the one hand we hear that efforts are being made to obtain higher prices for mechanical wood pulp, and on the other that several mills have accepted reduced prices for their product. An attempt to raise prices would no doubt tend to divert business into other channels.

SCANDINAVIAN manufacturers recently held a meeting at Christiania. Reports were submitted as to the condition of trade. The demand is stated to be fairly good, and prices on the whole fairly firm. The reduction in prices made by some mills was greatly deplored, and, in the opinion of those at the meeting, not warranted by the condition of the market.

REPORTING upon the French market, Mons. Grondal, of Paris, states that business in mechanical is dull, buyers preferring to await developments. Prices for the leading brands of chemical pulps are well maintained. Quotations will be found in our Market Report.

A GREAT decrease is reported in the shipping at Fleetwood. For some time past the dock has worn a most deserted aspect. Last year, principally through the opposition of the Manchester Ship Canal, the wood pulp trade, which was generally a large item in the year's returns, was almost *nil*. A correspondent, in speaking as to the future says, there are a few vessels ordered up, but they are not large ones, mostly Norwegian, and altogether the present outlook for Fleetwood dock appears very gloomy.

MR. GEORGE ROBERTSON, Mayor of St. John, N. Brunswick, recently addressed a meeting of traders and others at Manchester. He dwelt upon the remarkable development in Canadian and British trade through the port of St. John, which had taken place during the past few years. With larger steamers and a faster service St. John could handle an enormous amount of winter business. He urged the interest of Manchester men in the development of the port of St. John, and pointed out that it was not probable that Manchester vessels would ever leave St. John without a full cargo. Papermakers were interested in the wood pulp trade, and as the Americans were getting their raw material very largely from Canada, it was obvious to him that, if spruce wood could be obtained in New Brunswick cheaper than in any part of the world, the English papermakers would be able to drive their American cousins out of the market.

MR. HARDISTY, the Montreal manager for the E. B. Eddy Co., Canada, in a recent interview, said he considered that Canadian spruce limits were a resource more valuable than the wealth of the Klondike. The supply of spruce in Europe, he pointed out, was becoming exhausted, and he believed that Canada would succeed to the position of pulp and paper producer for the world. There was a rapidly growing demand in England for Canadian ground wood pulp.

THE CHICOUTIMI PULP CO., of Canada, is turning out 40 tons of ground wood pulp daily for the British market. The company has lately entered into an arrangement to establish a sulphite mill at a cost of about 250,000 dols.

A BILL incorporating a company to build and operate a pulp mill at Weymouth, N.S., Canada, has been passed by the Legislature.

AMONGST the arrivals of wood pulp from Canada during the week were the following:—At Liverpool, the s. "Lake Superior" with 1,731 bales, and the s. "Gallia" with 669 bales from Montreal. At Glasgow, the s. "Roumania" with 1,618 bales from Halifax.

THE week's receipts from the United States included 2,101 bales from Boston to London per the s. "Barrowmore," and 369 bales from New York to Hull per the s. "Martello."

WOOD PULP was imported into the United States during March, according to the latest official statistics issued, to the extent of 2,343 tons, valued at 53,095 dols. For the corresponding month of last year the quantity was 2,686 tons, valued at 54,643 dols. For the nine months ended March, 1898, there were imported 19,744 tons, valued at 388,018 dols., as against 35,652 tons, valued at 661,438 dols., for the nine months ended March, 1897.

DURING the month of March, 1898, there was exported from the United States wood pulp to the value of 59,340 dols., and during the nine months ended March, 1898, to the value of 415,830 dols.

THE PAPER TRADE REVIEW is a widely informed and well-managed enterprise, of great value to exporters for its exact Market Reports and statistics of Raw Material.—*Central-Blatt fur die Papier-Fabrikation*, Dresden.

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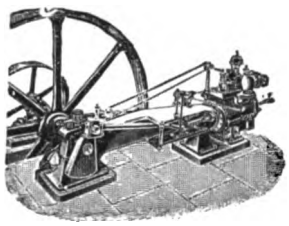

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GERMANY.

INLAND CANALS.—The inland canal scheme interests the paper trade. The three principal schemes are Rhine-Danube, Danube-Oder, and Danube-Elbe. By the first the Austro-Hungarian industry gets connected with Western Germany, by the others with northern Germany and the northern export ports. The Elbe-Danube scheme has not yet been fully worked out.

PASSAU.—The wood pulp trade, paper mills, pulp board and leather makers, according to a Chamber of Commerce report, were last year very busy, and upon the whole business was satisfactory.

THE DORSTENER PAPIERFABRIK are erecting pulp works for their own supply. The paper mills have two fast-running Füllner paper machines for printings and news of 2,100 and 2,000 mm. width. They also make imitation parchment paper, in reels for staining purposes, and machine-glazed chemical pulp papers. The pulp works are in the immediate neighbourhood of the paper mills. The chimney will be 50 meters high and of two meters diameter at the top. Four steam boilers of 200 square meters heating space and a pressure of 12 atmospheres are being supplied by Herren Simonis and Lang, in Frankfurt o/M. A three-cylinder steam engine of 1,000-h.p., an auxiliary ditto of 15-h.p., and various appliances for the pulp manufacture came from Herren Starke and Hoffmann, in Hirschberg, in Silesia. The firm of H. Füllner, in Hirschberg, will provide all the machinery and appliances for the chemical pulp manufacture. The chemical pulp factory will at first produce six tons a day dry pulp, and the mechanical pulp factory 12 tons dry pulp a day. It is expected that work will be commenced in September.

PRICES OF PAPER.—German papermakers still discuss the question why, when there is a good demand, the prices of paper cannot be improved? They seem to think that unless a general understanding can be made, not only in Germany, but also in other paper producing countries, every attempt to raise the price in one direction will only drive business into other channels. Even syndicates of certain branches will eventually be powerless unless some method is arranged for working in alliance with other syndicates.

AUSTRIA.

THE STATE OF TRADE.—The dull condition of the paper trade is referred to in a report by the Pilsen (Bohemia) Chamber of Commerce. It appears that the demand for straw paper is only half what it was ten years ago, the cause being attributed to the expansion of the chemical wood pulp trade. It would, perhaps, not have lost ground quite so easily if it had found more protection, but in the last treaty with Italy the Italian import duty was fixed too high. Roumannia at one time was also a good customer of Austrian mills, but the import duty is now almost prohibitive. Another difficulty are the transport rates, as Italy e.g., can ship to the East of Europe at lower rates than the Austrians. Particularly the rates from Trieste are in no proportion to the value of the article. A rate of nearly 2 fl. on an article costing only 8 fl. the metre cwt. stops all further orders. Moreover the taxes and local rates in the paper trade are considered far too high. In comparison a German mill on the Rhine with 552,000 M. profit pays 12,150 M., an Austrian, with 225,000 fl. pays 56,925 fl. One large papermaker, having mills in various parts of Bohemia, states that Austria formerly was a leader in this trade, and that the original and local contributions would still continue highly favourably, if the tariffs did not stand in the way. Both inland rates, and those for exportation are far too high. The profit is very small. The newspaper duties greatly hamper the development of the press, and makes printing more expensive, as of course this refers to publishing generally. Many books largely sold in Austria are printed in Germany, and imported free of duty. The paper required is of course also supplied by Germany. Chemical pulpmakers express their satisfaction with the reasonable spirit in which factory inspectors carry out the existing regulations. But they think more liberty should be given to them to relax the Sunday restrictions in special cases.

UNITED STATES.

TALK OF ANOTHER COMBINATION.—Mr. Henry Churchill, of Herkimer, N.Y., is reported to be visiting western news mills with the view of securing options, data and other information, for syndical purposes. Mr. Churchill was interested in one of the companies taken over by the International Paper Co. The latter concern, however, state that they are not connected with Mr. Churchill's present negotiations.

AMERICAN MACHINERY FOR SWEDEN AND CANADA.—The Bagley and Sewall Company, Watertown, N.Y., have lately received a large order for wet machines to go to Sweden. The order came from the Stora Kopparbergs Bergslags Aktiebolag Company, Falun, in the northern part of Sweden. The machinery will be of Bagley and Sewall Company's new hydraulic pattern. Orders for similar machines have also been received for Canada.

IT IS said that a syndicate representing the New York *World* has made propositions for the purchase of the paper mills in Elkton,

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Md., belonging to the late Mr. William M. Singerly.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included the following:—To London, 4,509 packages; Liverpool, 1,086 packages; Hull, 861 packages and 62 cases; Bristol, 12 cases; Glasgow, 193 packages; Antwerp, 645 cases; Bremen, 8 cases; Berlin, 30 cases; Copenhagen, 4 packages; Hamburg, 15 packages; Rotterdam, 1 package; Argentine, 11 packages; Australasia, 357 packages; B. W. Indies, 498 packages; B. Honduras, 57 packages; Brazil, 97 packages; Mexico, 180 packages; Newfoundland, 74 packages; and N. Zealand, 1,089 packages.

THE "ST. MARY CRAY" PAPER IN THE STATES.—John Glenn and Co., Ltd., have issued the following circular:—"We beg to inform you that we have sold our entire stock of 'St. Mary Cray' paper, manufactured by William Joynson and Son, of St. Mary Cray, Kent, England, to George B. Hurd and Co., of 425 and 427, Broome-street, New York City, and that arrangements have been made for a continuation of the sale of these papers through them as sole agents."

MESSRS. S. L. ROSE AND FRANK, importers and exporters of paper and rags, 422, Broadway, New York, have opened a London office at 77A, Queen Victoria-street. They have also opened an establishment at 42, Bergstrasse, Berlin.

Foreign Strawboards, &c.

The following were the imports of straw boards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

400	b	Cologne	London	5863	b	Rotterdam	Manchstr
175	,,	Ghent	,,	2006	,,	Delfyzl	Grangemth
1838	,,	Rotterdam	,,	1	,,	Havre	Southampton
400	,,	,,	,,				

WOOD PULP BOARDS.

493	b	New York	London	60	b	Hambro	London
55	c	Boston	,,	179	,,	Stettin	,,
757	b	Hambro	,,	97	,,	New York	Manchestr
52	c	,,	,,	10	,,	Gothenburg	,,

MILLBOARDS.

160	b	Hambro	Goole	4142	b	Harlingen	,,
28	,,	,,	,,	9581	,,	,,	,,
2	,,	Copenhagen	Leith				

PASTEBOARDS.

404	b	New York	London	93	r	Harlingen	Leith
280	,,	,,	,,	5401	b	,,	,,
65	,,	Rotterdam	Manchstr				

b—bales. c—cases. r—rolls. cr—crates.

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THE WORLD'S PAPER TRADE REVIEW, the leading European exponent of the paper trade.—*American Paper Trade and Wood Pulp News.*

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A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

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Subscription £1 per annum, Post Free.

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MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, JUNE 17, 1898.

Stationers' and Paper Manufacturers' Provident Society.

We have received the fifty-eighth report of the committee of management of the Stationers' and Paper Manufacturers' Provident Society, which was formed to raise a fund of not less than £10,000, now increased to upwards of £33,000 to be applied for the benefit of stationers, stationers' assistants, paper manufacturers, their clerks and foremen, stationers and booksellers, stationers and printers, stationers and binders, and such other persons connected with the stationery trade as the committee shall think eligible to become members, and their widows and orphans, when in necessitous circumstances. Since its formation the Society has been able to exercise a vast amount of good in granting relief and annuities to those members who found themselves, unfortunately, placed in adverse circumstances. We are glad that the annual report shows a steady improvement in the Society's financial position. During the past year the income from all sources amounted to £1,506 15s. 7d., out of which payments have been made amounting to £1,106 15s. 7d., and £379 19s. 4d. of the surplus has been invested with the commissioners for the reduction of the National Debt. We notice that Mr. Alderman T. V. Strong, a member of the committee representing the wholesale, has been nominated a trustee to fill the vacancy caused by the death of the late Sir George Robert Tyler, Bart. The president of the Society is Sir John Evans, K.C.B., D.C.L., F.R.S., and amongst the vice-presidents are Mr. G. Chater and Mr. Alderman and Sheriff Frank Green. The treasurer is Mr. T. A. Hodgkinson, and on the committee are Messrs. E. Percy Barlow, F. P. Barlow, S. B. Dunster, Hy. Green, R. W. Edwards, etc., etc. The hon. secretary is Mr. Frederick West, of 66, Cannon-street, E.C. On Thursday evening the anniversary dinner was held at the hall of the Worshipful Company of Stationers, and a report of the proceedings will appear in our next issue.

* * *

Papermakers' Raw Materials.

THE following figures show the comparative values of papermakers' raw materials imported during the first five months of this and the previous year:—

	Jan.-May, 1897.	Jan.-May, 1898.	Increase or Decrease.
Wood pulp ...	£744,365	£723,166	— £21,199
Esparto	378,314	359,192	— 19,122
Rags	112,950	83,620	— 29,330

Although the values for 1898 are lower than for last year, it may be pointed out that 3,807 tons of wood pulp and 2,704 tons of esparto above the quantity for the corresponding period of last year have been imported. In rags there is a decline of 2,825 tons.

* * *

Patent Laws.

THAT there is plenty of room for improvement in the method of granting British patents is well known, and Sir J. Leng did well to direct attention to the matter in the House of Commons the other day. He asked the President of the Board of Trade whether, in view of the surplus on the Patent Office accounts for the year 1897, amounting to £111,299, he would consider the expediency of appropriating a portion of that excess of income to the cost of such preliminary examination for novelty of inventions as was made by the German Patent Office; and whether some rule could be adopted to prevent applicants who had been refused patents in their own country obtaining them in the United Kingdom. Mr. Ritchie, in reply, said the question touched a very important matter which was receiving his careful attention. It is obvious, he said, that as long as the Patent Laws of different countries are different patents must be granted in some countries for inventions for which they will not be granted in others. He was glad to say, however, there is a constant tendency to assimilation.

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Stocks and Shares.

Business in paper shares has again been rather slack during the past week, although several fluctuations are to be noted among the better class companies. The "combine" proposals seem to arrest all the attention of intending purchasers, and until the matter is settled (probably next week) very few transactions will take place. Bergvik are again firmer, and the prefs. have risen ⅛ and the debs. 2. East Lancashire ord. are still in request, and an advance is noted of ⅛, a like result having taken place in North of Ireland. There are several enquiries for Ramsbottom ord., but no seller at present, and these have improved ¼. The only falls of note are ⅛ each in Burnley and Kellner-Partingtons, the former being very dull. Star have again paid 10 per cent. on both ord. and pref., though the report is for five months' operations only.

In chemicals, very little change is apparent, and the only rise is that of another 6d. in Castner-Kellners. United Alkali ord. are down ¼, and pref. ⅛, on selling orders predominating. Bowman, Thompson pref. are still offered, but Brunner, Monds are unchanged.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices June 14th.
10	10	Bath Paper Mill Co. (Ld.)	5	11⅞—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	104—106
10	10	do. do. 6% pref.	6	12⅞—13⅛
3½	5	Burnley Paper Co. (Ld.)	10	6¼—6½
7	7	Bury Paper, ord. "	6	6½—6⅝
7	7	do. 6% pref. "	6	7⅛—7⅜
2⅜	3	Collin (Darwen) Paper "	nil	⅛—¼
5	5	Darwen Paper Mill Co. "A"	15	11½—12
3½	5	do. do. "B"	15	9—9½
10	10	E. Lancashire Paper Co. Ld.	nil	⅛ 8½
10	10	do. do. 6% pref.	nil	⅛ 8¼
5	5	do. do. bonus	nil	⅛ 4⅛
100	100	Ekman Pulp & Paper Co. Ld. debs	4½	95—97
4	5	Hartlepool Pulp & Paper "	10	6¾—7¼
5	5	Hyde Paper Works Co. "	nil	1½—2
2⅜	5	Kellner-Part'gt'n P'p Co. "	12*	7⅛—8
5	5	do. do.	12*	14—14½
100	100	do. do. debs.	4½	106—108
4	5	N. of Ireland Paper Co. "	12½	8⅛—8¼
7	10	Olive Brothers "	10	7—7½
1	1	Owen, T. & Co. 6% pref	6	26/6—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
100	100	do. do. debs.	5	112½—113½
5	5	Peebles (A. M.) & Son "	7⅛	7⅞—8
5	Stock	do. 5% cum. pref.	5	⅜—6½
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. "	12½	7⅛—7½
1	1	do. do. cum. pref.	5	1⅛—1½
4½	5	Roach Bridge Paper Co. "	10	5⅜ 5⅝
5	5	Star Paper Co.	10	8⅛ x.d.
3	5	do. do. cum. pref.	10	6⅛ x.d.
10	10	Waterlow & Sons non.-cum. def.	—	13¾—14¼
		do. do. non.-cum. pref.	4	13¾—14¼
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7⅛	6⅞—6⅞
10	10	do. do. cum. pref.	7	10⅛—10⅝
100	100	do. do. debs. (red. 1904)	6	105—107
10	10	Brunner, Mond & Co. (Ld.)	20	37½—37⅞ x.d.
3⅛	10	do. do. "New" "	20	14⅝—15 x.d.
10	10	do. do. 7% pref. "	7	17⅛—17⅜ x.d.
5	10	do. do. do. new issue	7	8 5/16—8 7/16 x.d.
1	1	Castner-Kellner Alkali Co	—	24/—25/-
5	5	Clayton Aniline cum. pref.	6	5⅛—6
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅛—11½
	Stock	do. do. deb. stock (red. 1912).	4	105—107
10	10	United Alkali Co. "	2	1⅛—1⅛
10	10	do. do. cum. pref. "	7	8⅛—8⅛
100	Stock	do. mort. deb. (red. after 1901)	5	110—110½

* Interim.

MR. R. P. SKELTON. of the Ramsbottom Paper Mill, and Mr. Harry B. Wood, wood pulp merchant, Manchester, have recently arrived home, per the "Lucania," from a trip to the United States. Mr. Skelton visited Boston, Holyoke, New York, and other centres of the trade.

PAPERMAKERS AND POLLUTION.—At the last monthly meeting of the Mersey and Irwell Joint Committee, the Chemical Sub-committee reported that the consideration of the position of Messrs. Yates, Duxbury, and Sons, Heap Bridge, Bury, was adjourned at the last meeting of the Joint Committee in order that a sample of the effluent, which had then been obtained, might be analysed. Mr. Scudder had since reported that it contained no less than 57½ grains of solid matter in suspension. With reference thereto the following letter had been received from the firm :—"Heap Bridge Paper Mill, Bury, Lancashire, May 13th, 1898. Dear sir,—We are in receipt of your letter of the 11th instant, and regret to hear that our effluent is still unsatisfactory. We had hoped after making the large settling tank we have it would have turned out satisfactory. We have, however, ordered two large presses in the place of the one we have now at work, and we trust by the use of some precipitant, we shall be able to turn out a satisfactory effluent, as we shall then have sufficient presses to press all the sludge if we can only get the precipitant to throw the solid matter down.—Yours faithfully, YATES, DUXBURY, & SONS." The sub-committee had carefully considered the explanation, and in order to give the firm an opportunity of improving the effluent, they recommended that the consideration of the matter be adjourned for two months.—The Chief Inspector also reported that the tanks of the Bury Paper-making Company were much too small, although the firm had plenty of land for the purpose of extending the same. Your sub-committee recommended that the clerk be instructed to serve a written notice upon the firm, inviting them, if they so desire, to attend the July meeting of the Joint Committee, to show cause why proceedings should not be taken against them for offences against Part III., Section 5, of "The Mersey and Irwell Joint Committee Act, 1892."—These recommendations were adopted.

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IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

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WANTED, MACHINEMAN for good News Mill; must be steady, sober, and industrious, and be able to pay attention to his work. State wages and experience; good testimonials necessary.—Address, No. 7,305, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7305

WANTED, MACHINEMAN, one accustomed to M. G. Papers; permanent and comfortable situation to steady and energetic man; married man preferred. Close one o'clock Saturdays.—Address, with references, age, and where last employed, to G. T., No. 7,307, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7307

WANTED, FOREMAN, well up in M. G. Caps; also state whether used to Fourdrinier Papers.—Address, stating experience and wages required, to X. Y. Z., No. 7,313, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 7313

Situations Wanted.

A BEATERMAN wants Situation as Beaterman or Working Foreman; used to Ropes and M.G. Browns, and all kinds shop papers; first class references from last place.—Wm. Rabjohns, Ethel House, Sheene-road, Bedminster, Bristol. 7301

AS TOWN TRAVELLER.—Wanted by a paper mill manager of great experience, a position as Traveller with wholesale stationer, agent, or to represent a mill. Practical knowledge of all classes of white and coloured papers. Active business habits; good references; age 40.—Address, No. 7,277, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe lane, London, E.C. 7277

MANAGER wants Re-engagement; practical papermaker, any class; active and energetic; good references.—Address, No. 7,287, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, E.C. 7287

MACHINEMAN seeks Situation, 13 years' experience in mills making E.S. Writings and Printings. Good references as to character and ability. Address, No. 7,296, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7296

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

MANAGER now open to Re-engagement; 15 years' experience as such in first class mills. Good papermaker, with thorough knowlege of rags, esparto, and wood pulps; experience of limited companies, and used to entire control. Active and energetic; age 42; good references.—Address, No. 7,278, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7278

PRACTICAL PAPERMAKER and experienced Wood Pulp Buyer, open for engagement as Buyer and Manager for paper mill.—Address, No. 7,311, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7311

Machinery.

PAPERMAKING MACHINE Wanted, over 72-in. wide; must be in good condition and strong for fast running.—Address, No. 7,289, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7289

WANTED, good second-hand Revolving Cutter, 72 inches to 80 inches wide; must be in good condition. State particulars and where to be seen.—Address, No. 7,299, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7299

Miscellaneous.

BRITISH AGENCY Wanted in France for Fine Writings by an old-established, substantial papermaking and wholesale firm of Bordeaux.—Address, No. 7,306, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7306

FACTORY SITES.—For Sale, Capital Sites, with extensive river frontage; convenient to the depots of five different lines of railway.—Apply, F. H. Cooke, Land Agent, Peterborough. 7300

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

PAPER MILL FOR SALE.—Brown Paper Mill in Scotland, 64 inch machine, steam and water power.—Particulars on application to No. 69, Keith & Co., Advertising Agents, Edinburgh. 7303

PAPER MILL, in home counties, for disposal as going concern. Suitable for Blottings, Browns, etc.; capable output, 8-10 tons per week.—Address, "Demy," No. 7,310, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7310

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BATCHELOR, Richard D., Artesian and Consulting Well Engineers, 73, Queen Victoria Street London, E.C., and at Chatham.

ISLER, C. & Co., Bear Lane, Southwark London, S.E.

CHINA CLAY.

ROGERS, J. & Co., Truro, Cornwall.— Agents, W. G. Taylor and Co., Ltd., 83, Queen Victoria Street, London, E.C., and 44a, Lancaster Avenue, Manchester.

W. SINGLETON BIRCH & SONS, Ltd., 15, Upton Street, Manchester. Mines: Rosevear, St. Austell, Cornwall.

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CASTLE, Arthur, 113, Cannon Street Road, London, E.

RAGS.

CHALMERS, E. & Co., Ltd., Bonnington Leith.

MULLER, A. E., 9, Fenchurch Street, London, E.C.

SCHNURMANN, J., 148, Wool Exchange, London, E.C. Importer and Exporter of Paper Stock, Woollen Rags, Waste, etc.

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ABBOTT & Co., Ltd., Ratcliff, London, E. Agents for the best makes Sulphite and Soda Pulps, also Mechanical.

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MULLER, A. E., 9, Fenchurch Street, London, E.C.

WERTHEIM, A. & Co., Hamburg.

THE SCANDINAVIAN SECTION

OF THE

World's ABC Paper Mill Guide

Containing Particulars of the Paper and Pulp Mills in Norway, Sweden, Denmark and Finland.

PRICE FIVE SHILLINGS.

WE have pleasure in announcing the issue of the above. It is in a convenient 8vo form, and, to some extent, on the lines of our last Mill Guide, but the information there given is very considerably added to with the view of making this section of the work a complete directory of the "Paper and Pulp Trade of Scandinavia." Full particulars, are given of class of pulp or paper made, output, machinery and power used, nearest railway station, managers and owners, &c., &c.

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- PAPER DEALERS,
- MILL FURNISHERS,
- ENGINEERS,
- PAPER MACHINERY MANUFACTURERS
- RAG and PAPER STOCK MERCHANTS,
- PRINTERS,
- STATIONERS,
- PUBLISHERS, &c., &c.

should note that the A B C Scandinavian Mill Guide will be at once the fullest and most comprehensive work of the kind ever published.

MAP.

The Directory is accompanied by a Large Scale Map showing the situation of the various mills, with numbers appended, referring to the entries in the Guide, and also a numerical index to the names of the Mills whose position is noted on the Map.

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MARKET REPORT.

IMPORTS AND EXPORTS OF

All Classes of Paper Stock

at the Ports of

LONDON	BARROW	HARWICH	GRANTON
LIVERPOOL	GOOLE	DOVER	GRANGEMOUTH
MANCHESTER	GRIMSBY	FOLKESTONE	DUNDEE
RUNCORN	BRISTOL	GLASGOW	BONESS
FLEETWOOD	HULL	GREENOCK	Etc., Etc.
PRESTON	SOUTHAMPTON	LEITH	

For the Week ending Tuesday last.

FROM SPECIAL SOURCES AND TELEGRAMS.

CHEMICALS.—The chemical market is quiet, and the export trade rather limited. AMMONIA ALKALI is quoted £4 2s. 6d. to £4 5s. 6d., and Carbonated 58 per cent. £4 15s. and Caustic 57-58 per cent. £4 17s. 6d. f.o.b. Liverpool. CAUSTIC SODA 77-78 per cent. stands at £8 2s. 6d. to £8 10s. and BLEACHING POWDER £5 2s. 6d. to £5 7s. 6d. for soft wood, and £6 for hard wood f.o.b. Liverpool. SODA CRYSTALS are offered at £2 5s. and SALT CAKE at 25s. RECOVERED SULPHUR is firm at £4 15s. to £5. ALUM is unchanged.

Quotations are nominally as follows:—

Alkali, Ammonia, 58%	...	f.o.b. Liverpool	£4	5 0
,, ,, 48%	...	,, ,,	4	0 0
Alum (Ground), tierces	...	,, ,, 2½%	5	5 0
,, barrels	...	,, ,, 2½%	5	15 0
,, tierces	...	,, Hull 2½%	5	2 6
,, ,,	...	f.o.b. Glasgow 2½%	5	5 0
,, (Lump) ,,	...	f.o.b. Liverpool 2½%	4	12 6
,, barrels	...	,, ,, 2½%	4	15 0
,, tierces	...	,, Hull 2½%	4	12 6
,, ,,	...	London 2½%	5	2 6
,, ,,	...	f.a.s. Glasgow 2½%	4	12 6
Alumina Sulphate ...	...	f.o.b. Tyne net	3	11 3
Aluminoferric Cake, slabs	...	Liverpool	2	15 0
,, ,, tierces		,,	3	2 6
Alumina Cake, slabs...	...	Glasgow	2	10 0
Blanc Fixe	...	f.o.b. Tyne net	6	12 6
Bleach	...	,, ,, net	6	0 0
,, (soft wood)	...	f.o.r. Lancs. net	5	5 0
,, (hard wood)	...	f.o.b. Liverpool net	6	0 0
,, (soft wood)	...	landed London net	6	5 0
Borax (crystals)	...	... ...net	14	0 0
,, (powdered)	...	... ...net	14	10 0
Chloride of Barium	...	f.o.b. Tyne net	6	15 0
Caustic White, 76%	...	,, Liverpool net	8	7 6
,, ,, 74%	...	,, ,, net	8	2 6
,, ,, 70%	...	,, ,, net	7	10 0
,, ,, 70%	...	f.o.r. Lancs. net	7	7 6
,, ,, 60%	...	f.o.b. Liverpool net	6	10 0
,, Cream, 60%	...	f.o.r. Lancs. net	5	15 0
,, ,, 60%	...	f.o.b. Liverpool net	5	17 6
,, Bottoms, 60—62%	...	f.o.r. Lancs. net	4	12 6
Soda Ash, Carbonated, 58%	...	f.o.b. Liverpool net	4	15 0
,, ,, 48%	...	,, ,, net	4	12 6
,, ,, 58%	...	f.o.r. Widnes net	4	10 0
,, ,, 48%	...	,, ,, net	4	5 0
,, Caustic, 48%	...	f.o.b. Liverpool	4	12 6
,, ,, 57-58%	...	,, ,,	4	17 6
Hypo-Sulphite of Soda	...	f.o.r. Tyne	4	15 0
,, (10 ton lots)		ex ship Liverp'l net	5	0 0
Salic Acid	...	f.o.b. Liverp'l 3½%	per lb.	3
t Cake	...	on rail, in bulk	1	0 0

Sal Ammonia (1sts) ...	...	f.o.b. Liverpool	35 0 0
,, (2nds) ...	...	,, ,,	33 0 0
Soda Crystals ...	...	,, Tyne net	2 17 6
,, ...	...	ex ship Thames 2½%	2 17 6
,, ...	...	f.o.b. Liverpool 5%	3 0 0
Sulphur, rolls ...	...	f.a.s. works 2½%	6 5 0
,, flowers ...	...	,, ,, 2½%	7 5 0
,, recovered ...	...	,, ,, 2½%	5 0 0
Sulphate of Ammonia	...	,, ,, 2½%	9 10 0
,, Copper ...	...	,, Liverpool 5%	16 5 0

FOREIGN.—*F.o.b. Continental Ports:*

Hypo-Sulphite of Soda, 10-ton lots casks ...	...	4	10 0
Sulphate of Alumina, 7-8 cwt. casks net c.i.f. L'd'n		3	15 0
Blanc Fixe (c.i.f. London)	...	7	0 0
White Sugar of Lead	...	27	0 0
Zinc Oxide	...	19	5 0
Bleaching Powder	...	5	15 0

CHEMICAL WOOD PULPS.—There is a fair demand, and manufacturers of SULPHITE are firm in their quotations. Some mills talk of higher prices, but any advance would certainly check business. SODA pulps steady.

GREAT BRITAIN.

Prices, ex steamer, East Coast, are nominally as follows:—

Sulphite, Unbleached, Common	...£8 12 6 —	9 0 0
,, ,, Superior	... 9 5 0 —	9 10 0
,, Bleached	...11 10 0 —	15 0 0
Soda, Unbleached, Common ...	... 8 5 0 —	8 10 0
,, ,, Extra... ...	... 8 15 0 —	9 5 0
,, Bleached	...10 10 0 —	12 0 0

SCANDINAVIA.

Sulphite, Prime, f.o.b.	Kr. 150 — Kr. 160
Sulphate, f.o.b.	Kr. 130 — Kr. 140

FRANCE.

C.i.f. Rouen per 100 kilos. (2 cwt.).

Bisulphite, Unbleached, dry, 1st quality	Frs. 22.50— 24
,, Bleached	32 — 36
Soda and Sulphate, Unbleached, 1st quality...	21.50— 22.50
,, ,, Bleached ...	27 — 35

UNITED STATES.

Sulphite, American, Unbleached ...	$1½ — 2
,, Foreign, Bleached	3.15 — 3.50
Soda, American, Bleached	1.90 — 2.10
,, Foreign, ,, ...	2.70 — 2.80
,, ,, Unbleached	2.10 — 2.15

MECHANICAL WOOD PULPS.—There is an improved demand for prompt as well as forward delivery, and at the recent meeting of Scandinavian manufac-

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turers at Christiania the outlook was held to be very promising. Complaints were made, however, that certain mills had sold at prices considerably under those agreed upon by the majority of makers.

GREAT BRITAIN.

Quotations, ex steamer, East Coast, are nominally as follows:

Aspen, dry	...	...	...	...	...			£6	10	0
Pine, dry	...	...	...	...	...	£4	8	9—4	12	6
,, moist	...	...	...	...	...	2	5	0—2	7	6
Brown, dry	...	...	...	...	...			4	15	0
,, moist	...	...	...	...	...			2	10	0

FRANCE.

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos. (2 cwt.).

Pine, 50% moisture, ordinary	... ...	Frs. 10.50—11
,, ,, fine	... ...	11 —12
,, dry, ordinary	... ...	11 —11.50
,, ,, fine	... ...	11.50—12.50
Aspen ,, fine	... ...	16 —17.50
Brown (half-chemical), 50% moisture	...	10.50—11
,, ,, dry	... ...	12 —13

UNITED STATES.

F.o.b. Mill, nearest port (per 2,000 lbs.)... 13 dols.

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
3379 bales	Drontheim		London
400 ,,	Hambro		,,
557 ,,	Drammen	Green and Co.	,,
400 ,,	,,	A. H. Keep	,,
160 ,,	,,	Becker & Co	,,
400 ,,	,,	Tough & Co.	,,
8 ,,	,,	Johnsen & Co	,,
190 ,,	,,	Alsing and Co	,,
90 ,,	,,	J. C. Foulger	,,
89 ,,	,,	L. Hulle	,,
74 ,,	,,	Becker and Wagner	,,
40 ,,	,,		,,
4200 ,,	,,	R. Lloyd Ltd	,,
600 ,,	,,	Becker and Co	,,
800 ,,	,,		,,
31 ,,	Rotterdam		,,
190 ,,	,,		,,
2101 ,,	Boston		,,
422 ,,	Ghent		,,
150 tons	Fredrikstadt	J. Sharp	,,
2575 bales	Ternuzen		,,
26 ,,	Rotterdam		,,
69 ,,	,,		,,
4815 ,,	Drammen	E. Lloyd	,,
800 ,,	,,	Becker and Co.	,,
179 ,,	Antwerp		,,
901 ,,	Carlshamn	London Paper Mills Co	,,
61 ,,	Gothenburg	R. L. Lundgren	,,
320 ,,	,,	W. G. Taylor & Co	,,
21 ,,	,,	Green and Co	,,
34 ,,	,,	Spicer and Son	,,
20 ,,	,,	Spicer Bros	,,
60 ,,	,,		,,
203 ,,	,,	Tough and Co	,,
115 brls.	Ghent		,,
51 bales	Rotterdam		,,
2887 ,,	Frano		,,
315 ,,	Rotterdam		,,
511 ,,	Oporto		,,
15 ,,	Stettin		,,
6 ,,	Rotterdam		Liverpool
1731 ,,	Montreal		,,
40 ,,	Antwerp		,,
187 ,,	Rotterdam		,,
619 ,,	Montreal		,,
764 ,,	Gothenburg		Hull
761 ,,	Drontheim		,,
600 ,,	Christiania		,,
168 ,,	Christiansand		,,
256 ,,	Bergen		,,
369 ,,	New York		,,
47 cases	Abo		,,
176 bales	Gothenburg		Manchester
1060 ,,	,,		,,
1618 ,,	Halifax		Glasgow
3806 ,,	Drammen	A. and J. Clark	,,
216 ,,	Gothenburg		Granton
100 ,,	Hambro		Southampton
103 ,,	Rotterdam		Goole
400 ,,	Malmo		Grimsby
35 ,,	Rotterdam		Leith
120 cks.	Hamburg		,,
406 bales	,,		Grangemouth
332 ,,	Christiania		,,

Totals of Wood Pulp from Each Country:

BELGIUM ...	641 bales	HOLLAND ...	3588 bales
,, ...	115 brls.	NORWAY ...	23426 ,,
CANADA ...	4018 bales	,, ...	150 tons
FINLAND ...	47 cases	PORTUGAL ...	521 bales
GERMANY ...	921 bales	SWEDEN ...	6819 ,,
,, ...	170 cks.	U.S.A.	2470 ,,

ESPARTO.—The market continues in its former quiet state with practically no business passing in Spanish esparto, and not much in African. Prices of latter are firmly quoted by sellers both for winter and spring shipments. There is little or no enquiry for earlier parcels.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston, and Tyne Docks, are nominally as follows:

Spanish—	Fair to Good	... ...	£4	17	6—5	5	0
	Fine to Best	... ...	5	10	0—5	15	0
Oran—	Fair to Good	... ...	2	17	6—3	0	0
	First Quality	... ...	3	5	0—3	7	6
Tripoli—	Hand-Picked	... ...	3	2	6—3	5	0
	Fair Average	... .	2	17	6—3	0	0
Bona and Philippeville		... ...	3	5	0—3	17	6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
4640 trusses	Arzew		Grangemouth
360 tons	Aguilas	H. Ottmann	Glasgow
1025 ,,	,,	Morris and Co.	Granton
433 ,,	Bona		Leith
404 ,,	Oran		Liverpool
4101 bales	Tripoli	J. Hassan	London
552 ,,	,,	S & V. Nahum	,,

HOME RAGS.—Advices from the principal centres state that there is a steady demand at well maintained prices. Stocks are low.

LONDON.

N. White Cuttings	18/0-22/0	Canvas No. 1 ...	14/0-15/9
Fines (selected) ...	19/6-21/0	,, No. 2 ...	9/6-10/0
,, (good London) ...	17/0-17/6	,, No. 3 ...	5/0
Outshots (selected)	11/0	Mixed Rope ...	3/0-4/0
,, (ordinary)	9/0	White Rope ...	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country ,,	4/0-6/6	Coil Rope	9/6
London Thirds ...	1/3	Bagging	1/3-1/9
Country ,, ...	2/0	Gunny	2/0-2/3

BRISTOL.

Fines	16/0	Clean Canvas ...	14/0
Outshots	9/6	Second ,, ...	9/6-10/6
Seconds	5/0	Light Prints ...	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging ...	2/6	Tarred Manilla ...	6/0

MANCHESTER.

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best) ...	9/6	Bagging	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares ...	2/6-3/0

EDINBURGH.

Superfines	15/0	W. Manilla Rope	7/0
Outshots	12/0	Tarred Manilla Rope ...	5/6
Mixed Fines ...	14/0	,, Hemp Rope	8/0
Common Seconds	7/0	Rope Ends (new)	6/0
First ,,	10/0	,, ,, (old)	4/0
Prints	5/0	Bagging	2/3
Canvas (best) ...	15/0	,, (clean) ...	3/0-4/0
,, 2nd ...	8/0		
Black Cottons ...	2/6		

GLASGOW.

Fines	12/6-16/0	Canvas No. 1 ...	15/0
Blues	4/6	,, No. 2 ...	10/0
Common Blues ...	3/3	Manilla Rope ...	8/0
Bagging	4/0	Tarred Hemp ...	

DUBLIN.

White Cuttings ...	16/0	Mill Bagging ...	2/0
Fines	9/0	White Manilla ...	6/9
Seconds	3/6	Tarred Hemp ...	6/0
Light Prints ...	2/6	Rigging	10/0
Black ,, ...	1/6		

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FOREIGN RAGS.

The British demand is rather quiet, except for French and Belgian stock. Prices are weak. The arrivals at British ports during the past week were as under:

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
84	Amsterdam	Hull	35	Dunkirk	Grimsby
43	Hamburg	,,	84	Antwerp	—
60	Marseilles	,,	24	Ghent	,,
209	Leghorn	,,	154	Boulogne	,,
102	Hamburg	,,	116	Antwerp	Grimsby
49	Königsberg	,,	423	Dieppe	,,
59	Ghent	,,	110	Hamburg	,,
47	Bremen	,,	378	Ghent	Leith
70	Rotterdam	,,	13	Rotterdam	,,
14	Montreal	London	83	Dunkirk	,,
289	Ghent	,,	8	Cette	,,
29	Bordeaux	,,	77	Amsterdam	,,
21	Melbourne	,,	37	Jersey Southampton	
21	Lisbon	,,	22	Guernsey	,,
12	Hamburg	,,	30	Cherbourg	,,
379	Rouen	,,	94	Bordeaux Liverpool	
157	Dunkirk	,,	287	Lisbon	,,
60	Gothenburg	,,	78	Buenos Ayres	,,
119	Hamburg	Glasgow	157	St Nazaire Newlyn	
30	Rotterdam	,,	57	Caen	,,
54	Amsterdam	,,	11	Bordeaux Manchester	

Totals from Each Country:

AUSTRALIA	90 bales	GERMANY ...	451 bales
ARGENTINE	76 ,,	HOLLAND ...	368 ,,
BELGIUM ...	949 ,,	RUSSIA ...	49 ,,
CANADA ...	14 ,,	SWEDEN ...	62 ,,
CHANNEL Isles	39 ,,	SPAIN ...	425 ,,
FRANCE ...	1646 ,,		

FRENCH.

Ex ship London; Liverpool, Hull, 7/6 extra; Manchester, Bristol, Leith, 10/0 extra.

French Linens, I	21 0	Black Cotton ...	2 0
II 15/6; III	9/6	Blue Linen ...	7/6
White Cottons, I	15/6	New Light Prints	16 0
II 12/0; III	8/9	New White Cuttings	20 0
Coloured Cotton	3/6	,, Stay ...	15 0

BELGIAN.

F.o.b. Ghent. Freights: London, 8/0; Hull and Goole, 12/6; Liverpool and Leith, 10/0; Newcastle, 12/6; Dundee and Aberdeen, 15/0; Glasgow, 16/8.

White Linens, No. 1	21 0	House Cloths ...	2 9
,, ,, No. 2	16 0	Old Bagging (solid)	3 0
,, ,, No. 3	12 0	,, ,, (common)	2/6
Fines (Mixed) ...	12/0	New.	
Grey Linens (strong)	9/6	White & Cream Linens	35 0
,, (extra)	14 0	White Cuttings ...	22 0
Blue Linens ...	8 0	Unbleached Cuttings	21 0
White Cottons No. 1	18 0	Print Cuttings ...	8 0
,, No. 2	15/0	Flax and Hemp Waste.	
Outshots No. 3 ...	10 0	Flax Waste, washed and dried ...	10/0
Seconds No. 4 ...	8/0	Fair ...	8 0
Prints (Light) ...	8/6	Flax Card Waste ...	6 0
Fustians (Light) ...	4 0	Hemp Waste, No. 1	8 0
Fustians (Dark) ...	3 0	,, ,, No. 2	3 0
Black Cottons ...	3 0		
Hemp Strings (unt'rd)	2 3		

DUTCH.

F.o.r. Hull or Goole: 2/6 per ton extra London and Leith; 7/6 Liverpool; 12/6 Manchester.

Whites, No. 1 ...	14/0	Mixed Hemp Rope Coils ...	8 0
,, No. 2 ...	9/9	Broken (in bags) ...	6 0
,, No. 3 ...	6/3	W. Manilla Rope (coils)	7/3
Grey Linens ...	9/0	do. Tarred ,, ...	4/9
Clean House Cloth ...	3/0	Canvas No. 1 ...	14/3
Mixed Fustians ...	3/0	,, No. 2 ...	9/9
Coloured Prints ...	2 7½	,, No. 3 ...	6/3
Dark Prints ...	2 1½	W. Untarred Rope ...	9/3
Blue Cottons ...	5/0	Paper Shavings ...	5/0
Light Lilac Cottons	7/0	Free from wood ...	7/0

GERMAN.

HAMBURG: *F.o.b.*

NWC	19 0	LFX Second ditto ...	7/0
SPFFF	18 0	CSPFFF	14/0
SPFFF and SPFF ...	17 0	CSPFF	10/0
SPFF	14 0	CFB	6/0
SPF	11/0	Dark Blues (selected)	11/0
CCC	5/0	Wool Tares	8/0
FFX	4/0	Jute, No. I., 6/0: No. II.	5/0
White Rope ...	6/0		
Grey Linens ...	8/0		

SPFFF and SPFF	17/0	LFB ...	4/0
SPF	11/3	CSPFFF ...	10/0
FF	8/3	CSPFF ...	7/0
FG ...	8/6	CFB ...	5/3
FFX	7/0	CFX ...	4/3

PRUSSIAN.

F.o.b. Stettin, Hull, or Leith.

SPFFF	16/0	CC ...	4/6
SPF	12/6	Jute I.	3/3
FG ...	10/0	,, II.	2/3
LFB	8/0	Rope I.	8/3
FF	5/6	,, II.	6/3

NORWEGIAN.

F.o.b. Drontheim, Hull, Tyne, or Newcastle.

1st Rope ...	83/0	2nd Canvas ...	7/3
2nd ,, ...	56/0	Jute Bagging ...	
Manilla Rope ...	79/89	Foreign ...	36/5/0
Best Canvas	119/120	Mixed ...	26/29

TURKISH.

F.o.b. Constantinople, Smyrna, and Salonica.

1st White Cottons*	26	Sail Cloth or Canvas	5/3
2nd ,, ,,	26	Rope, Thick ...	6/0
Blue Cottons ...	13	,, Small	4/6
Coloured ,, ...	13		

*30 or 32 Inches and Salonica.

WASTE PAPERS.—Prices firm.

Cream Shavings ...	10/6	Small Letters ...	3/3
Fine ,, ...	8/0	Large ,, ...	4/3
Mixed ,, ...	2/6	Brown Paper ...	2/0
White Printings ...	7/0	Light Browns ...	3/3
White Waste ...	1/9	Dark ,, ...	2/3
Wood Pulp Cuttings	3/0	Books & Pamphlets	3/0
Blue Paper ...	2/0	Strawboard Cuttings	1/0
Crushed News ...	2/0	Jacquards ...	2/6

For Export: 2s. per ton extra.

JUTE.—Prices:

Good White ...	£15 0 0	—16 10 0	
Good ,, ...	13 0 0	—14 10 0	
Medium ,, ...	12 0 0	—12 10 0	
Common ,, ...	7 0 0	— 9 0 0	
Rejections ...	6 10 0	— 8 10 0	
Cuttings ...	3 0 0	— 4 0 0	

FLOCKS.—Cotton Flocks, fine quality. £2 10s. per ton at works.

BALING TWINE.—Prices:

	Thick.	Medium.	Fine.
Hemp ...	4d. per lb.	4¼d. per lb.	5d. per lb
Mixed ...	3¼d. ,,	4¼d. ,,	4¾d. ,,

STRAW PULPS.—Trade steady; prices firm.

Prices, c.i.f. London, Hull, or Leith:

German, dry, No. 1	£14 0 0
,, No. 2	13 0 0

STRAW.—Prices:

Oat, c.i.f. London ...	£1 17 0	F.o.r. Goole ...	£1 17 6
Wheat ,, ...	1 17 0	,, ...	1 17 6
Rye ,, ...	2 10 6	,, ...	2 10 0

SIZING.—The demand continues good and prices firm.

English Gelatine ...	... Per cwt.	£4 10	0—6 0 0
Foreign ,, ...	... ,,	3 10	0—5 0 0
Fine Scotch Glues ...	... ,,	2 5	0—3 0 0
Best Long Scotch Glues ...	,,	2 0	0—3 0 0
Common Black ...	... ,,	1 5	0—1 8 0
"Town" Glues ...	... ,,	1 18	0—2 5 0
"Bone" Glues ...	... ,,	1 6	0—1 10 0
Foreign Glues ...	... ,,	1 8	0—1 15 0
Bone Size ...	... ,,	5	6— 10 0
Gelatine Size ...	... ,,	6	6— 10 0
Dry B.A. Pieces ...	... ,,	2 10	0—2 15 0
,, English Pieces ...	... ,,	1 15	0—2 5 0
Wet ,, ,, ...	... ,,	8	6— 9 0
,, Sheep Pieces ...	... ,,	3	0— 4 0
Buffalo Hide Shavings ...	,,	1 12	0—2 0 0
,, Picker Waste ...	... ,,	1 12	0—1 15 0

ROSIN.—Market dull; demand small. The arrivals of Strained Spot, at 4s. 9d., have been heavy. Spot prices are as under:—

B/C	D	E	F	G	I	K	M	N	WC	WW
4/9	5/0	5/3	5/6	6/0	6/9	7/0	7/6	8/0		9/6

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STARCH.—Quotations have an upward tendency.

F.o.r. London, less 2½ % :

Maize—	Crisp	£10	0	0
	Pearl	8	10	0
	Powder	9	0	0
	Special	14	0	0
Farina—	Prime	12	10	0
	B.K.M.F.	14	10	0

Delivered, less 2½ % :

Rice—	Special (in chests)	19	0	0
	Crystal (in bags)	18	10	0
	Granulated (in bags)	17	10	0
Dextrine ...	... ...	16	0	0

COLOURS.—Market dull. Quotations are nominally as follows:

Mineral Black	... ... Per Cwt.	£0	3	0
,, (Superior)	... ... ,,	0	4	6
Ivory Black (Pure)	... ... ,,	0	12	0
Ochre ...	... ... ,,	0	2	3
French (J. C. Ochre)	... ... Per Ton	3	0	0
Chrome (Pure)	... ... Per Cwt.	2	0	0
Red Oxide	... ... ,,	0	4	6
Umber (Devonshire)	... ... ,,	2	10	0
,, (Turkish)	... ... ,,	2	0	0
Lamp Black...	... ... ,,	0	5	0
Ultramarine (Pure)	... ... ,,	1	15	0
Cochineal	... ... Per lb.	0	1	3

PASTE COLOURS, with 60% of Colour: (less 2½% d/d.)

Orange Pulp...	... ... Per Cwt.	2	0	0
Golden Yellow Pulp	... ... ,,	1	10	0
Lemon Yellow Pulp	... ... ,,	1	10	0
Prussian Yellow	... ... ,,	1	16	0
Green (free from Arsenic)	... ... ,,	1	16	0
Paste Blue, 20%	... ... ,,	0	18	0
,, 33%	... ... ,,	1	6	0
,, 45%	... ... ,,	2	5	0
Imperial Yellow (dry)	... ... ,,	0	16	0

MINERALS.—The best qualities of CHINA CLAY are in good demand, and a steady business is being transacted in FRENCH CHALK and MINERAL WHITE. SATINITE and SNOWDRIFT are in good request.

Mineral White (also known as Terra Alba, Gypsum, and Sulphate of Lime), per ton f.o.r. or boat at makers' works, less 2½% :—

Superfine ...	...	...	£1	8	0	del. Lancs.	£1	18	0
Pottery Superior	...		1	4	0	,,	1	14	0
Ball Seconds	...	...	1	0	0	,,	1	10	0
Seconds	...	...	0	15	0	,,	1	5	0
Thirds	...	...	0	11	0	,,	1	1	0

(Manchester, 2s. per ton less.)

China Clay, in bulk, f.o.b. Cornwall, 9s. to £1 3s. 6d., bags 4s., and casks 9s. 6d. per ton extra; delivered Lancashire, £1 18s. od. to £2 1s. 6d. (for best papers); f.o.r. London, in casks, £2 5s. od. per ton; f.o.b. Liverpool, in 5 cwt. casks, £2 2s. od. to £2 10s. od.

French Chalk, W.E., W.I.N.S.E.R., W.O., and other brands, £2 19s. od., £3 4s. od., £3 13s. 6d., and £3 17s. 6d. per ton, according to quality, less 2½%.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15s. od. to £5 2s. 6d. per ton of 10 bags.

Superfine Hardening, f.o.r. works, £2 0s. od. to £2 2s. od.

Patent Hardening (2 ton lots), f.o.r. Lancs., £3 5s. od.

Snowdrift (Paper Toughener), in ton lots, 12s. od. per cwt.

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16s. 6d.; calcined, £10 7s. 6d.

Magnesite (in lump), £1 19s. 6d. per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 0s. od. to £4 10s. od. per ton c.i.f. London, Manchester, and Glasgow.

Asbestos, brown grades, £14 0s. od. to £14 12s. 6d.

Sulphate of Barytes, No. 1, £3 4s. od.; No. 2, £2 12s. od.; No. 3, £2 2s. od.; No. 4, £1 17s. 6d. per ton, according to quality.

Bauxite, minimum alumina, 60%, 16s. 3d. f.o.b.

Pyrites (non-cupreous), f.o.b. shipping ports, 4⅜d. per unit.

Satinite, £3 0s. od. to £3 6s. 6d., in casks, f.o.b. Liverpool or Manchester.

Whiting, f.o.b., 10s. 6d. to 12s. 3d. per ton.

Sulphate of Alumina, £4 2s. 6d. to £4 15s. od. per ton del.

Hydrate of Alumina, £12 10s. od.

LIME.—The present price is 10/6 per ton f.o.r. works.

METALS.—LONDON: COPPER easy; TIN lower in value; LEAD quiet. Tuesday's official closing prices:—

Copper—							
G.M.B., cash	... ...	£50	2	6	—50	7	6
,, three months	... ...	51	7	6	—50	12	6
Tough	... ...	53	0	0	—51	10	0
Best selected	... ...	53	10	0	—54	10	0
Strong Sheet	... ...	61	0	0	—		
Tin—							
Fine foreign, cash	... .	68	2	6	—68	12	6
,, three months...	...	68	10	0	—69	0	0
Lead—							
Spanish ...	... ...	13	10	0	—13	12	6
English ...	... ...	13	15	0	—		

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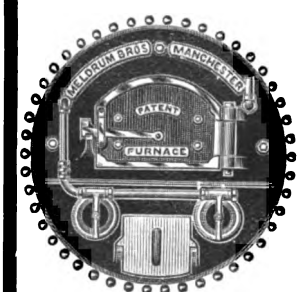

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Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	795	315	583
AFRICA	94	121	63
ARGENTINE	—	51	40
BELGIUM	75	62	109
B. GUIANA	23	2	—
BRAZIL	—	4	—
CHILI	121	24	209
CHINA	57	162	80
CHANNEL ISLES ...	—	—	40
DENMARK	—	—	4
FRANCE	35	95	188
GREECE	—	—	54
GERMANY	27	30	6
HOLLAND	—	—	41
INDIA	314	408	116
JAPAN	—	6	216
NEW ZEALAND... ...	676	569	2038
PORTUGAL	17	40	—
RUSSIA	—	15	19
SPAIN	—	—	28
SWEDEN	—	—	23
S. SETTLEMENTS ...	25	—	5
U.S.A.	65	15	2
W. INDIES	—	99	38

FROM GLASGOW.

CANADA	—	30	—
NEW ZEALAND... ...	—	—	37
NORWAY	—	—	4

British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls
AUSTRIA	42	—	—
BELGIUM	1458	19	—
DENMARK	31	—	—
FRANCE	557	12	—
GERMANY	2 41	29	—
HOLLAND	22 27	28	—
ITALY	79	—	—
NORWAY	2035	—	19
SPAIN	38	—	—
SWEDEN	2754	2	960
U.S.A.	1214	200	—

Including the Following:—

Quantity	From	Importer	Port
38 bales	Copenhagen	Puckert & Co	London
12 ,,	Christiania	Crabb & Co	,,
5 ,,	,,	Bott & Co	,,
41 ,,	,,	Alsing & Co	,,
9 ,,	Christiansand	Crabb & Co	,,
19 ,,	,,	C. Morgan & Co	,,
22 ,,	,,	E. Lloyd	,,
7 ,,	,,	Cookson & Co	,,
83 ,,	,,	G. M. Daal	,,
68 ,,	,,	W. Guppy	,,
135 ,,	Drammen	W. Cooper & Co	,,
61 ,,	,,	C. Davidson & Co	,,
29 ,,	,,	W. D. Edwards	,,
15 ,,	,,	E. Lloyd	,,
49 ,,	,,	C. Morgan & Co	,,
21 ,,	,,	A. Cowan & Sons	,,
71 ,,	,,	Clayden & Co	,,
58 ,,	,,	J. Spicer & Sons	,,
6 ,,	,,	J. Hamilton	,,
59 ,,	,,	Puckert & Co	,,
31 ,,	,,	Davis & Royle	,,
242 ,,	,,	J. Holloway	,,
24 ,,	,,	F. E. Foulger	,,
168 ,,	,,	L. Henle	,,
27 bales	Danzig	J. Lindsay	London
15 ,,	,,	J. Spicer & Sons	,,
12 ,,	,,	W. D. Edwards	,,
4 ,,	,,	Edwards, Dunlop & Co	,,
12 ,,	,,	Becker & Wagner	,,
37 rolls	Gothenburg	Schenkenwald & Co	,,
347 ,,	,,	Saunders & Co	,,
145 ,,	,,	Brough & Co	,,
100 ,,	,,	Crabb & Co	,,
70 ,,	,,	Spicer & Sons	,,
125 ,,	,,	R. C. Lundgren	,,
40 ,,	,,	H. T. Reed	,,
64 bales	,,	Schenkenwald	,,
1 case	,,	Gallehauk & Co	,,
1 ,,	,,	J. Eberstein	,,
54 bales	,,	Spicer & Sons	,,
46 ,,	,,	Relph & Co	,,
14 ,,	,,	Reed & Co	,,
26 ,,	,,	Saunders & Co	,,
109 ,,	,,	J. Hamilton	,,
— ,,	,,	Brough & Co	,,
6 ,,	,,	Crabb & Co	,,
46 ,,	,,	Lundgren & Co	,,
7 ,,	,,	J. E. Smith	,,
56 ,,	,,	R. C. Lundgren	,,
— ,,	,,	H. T. Reed	,,
10 ,,	,,	Brough	,,
50 ,,	,,	G. C. Lockwood	,,
443 ,,	Uddevalla	D. Gulland	,,
30 ,,	,,	R. L. Lundgren	,,

New Patents.

APPLICATIONS.

9,453. Improvements in strainers for straining paper pulp. H. J. Rogers.

9,518. Improvements in or relating to the treatment of cellulose for the purpose of obtaining sheets or blocks for dialysis and other purposes. P. Girard.

9,682. Improvements in apparatus for straining paper pulp and like materials. H. Sanguinetti and P. H. Sanguinetti.

9,704. An improvement in or applicable to the manufacture of paper. E. H. Joynson and J. S. Fearnley.

9,831. Improvements in the manufacture of caustic alkali and in obtaining of byproducts. J. Armstrong.

11,650. Improvements in the purification of caustic alkalies. G. W. Johnson.

11,833. Improvements in apparatus for damping paper, and such like while being calendered or for damping the fabric previous to its being dried and finished. D. N. Bertram.

11,949. Preparation of or method for employing the spent liquor from esparto-straw, wood pulp and similar mills as fuel. R. Cremer.

11,974. Improvements in apparatus for or in the method of utilising the spent liquor from esparto-straw, wood pulp and similar mills as fuel. R. Cremer.

12,040. A method or process for disposing of or destroying and utilising the spent liquor from sulphite pulp mills. R. Cremer.

12,075. Improvements in packing caustic alkalies. H. Precht.

12,096. Improvements in or relating to apparatus for treating cellulose or paper pulp and the like. A. Aberg.

12,140. Improvements in wire cloth. W. Begg.

SPECIFICATIONS PUBLISHED.

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1897.

11,246. Valves for rag and pulp engines and like apparatus in which thick or viscid material is treated or employed Dietrich.

11,418. Wire netting or cloth for use in the manufacture of paper. Kufferath.

13,195. Construction of drums used for straining or picking paper pulp and for other similar purposes. Walmsley and Chas. Walmsley and Co.

15,797. Manufacture of a fibrous material suitable for making paper from peat. Zschorner.

1898.

881. Process for the manufacture of chemically prepared peat fibres. Geige.

1,637. Apparatus for the electrolytic treatment of bleaching liquids. Haas.

1,995. Bed-plates for beating engines for use in the manufacture of paper. Maxfield and Lovejoy.

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The Stationers' Social Society.

Fourteenth Annual Summer Dinner.

There are two half-yearly events which stand out in bold relief in the history of the Stationers' Social Society, viz., the winter and summer dinners. The first is held in town, but the summer outing takes place in the country, choice of location being left in the hands of the committee, the members of which, aided by the energetic hon. secretary, Mr. W. Robinson, spare no efforts to study the welfare and enjoyment of the members. The summer outings on the two last occasions were celebrated at Gravesend, noted for its famous shrimps, and also for being the entrance to the port of London, the traffic on the river presenting a picture of great animation and interest. A change of venue, however, is desirable, and on Saturday last the "social stationers" journeyed to Hampton Court. The day was beautifully fine, and those who could spare the time were early on the scene, chartering boats for a spin on the river, whilst others made a circuit of the country around, eventually arriving at the Castle Hotel, East Molesley (where the dinner was served), in waggonettes. Many visited Hampton Court and its charming grounds.

At the dinner the chair was occupied by the President of the Society, Mr. Alderman and Sheriff Frank Green, who was supported on his right by Mr. Alderman Strong, Mr. C. D'Oyley Mears, etc., and on the left by Messrs. Monckton, Kershaw, G. A. Hudson, etc. There were also present Messrs. John Mackie, Barnard, Horsburgh, Rochfort, the number in all numbering over 100. The dinner, when over, left little time for speech-making, and the PRESIDENT, in proposing "The Queen and Royal Family," pointed out that fact, and hoped the speakers would make their remarks as brief as possible.

Mr. G. H. HUDSON proposed "The Paper Trade." He referred to the wonderful increase in the consumption of paper, also to the publication of "extra specials" on account of the war troubles, but he would not speak as to the authenticity of the news. The paper consumed by the newspaper press to-day was enormous. He considered the paper trade one of the most important industries of the present day. Excepting America, the British were well able to hold their own. He could not congratulate the paper trade upon any rise in price, but he hoped the increased consumption compensated for the fall that had taken place.

Mr. JOHN MACKIE responded. He was of opinion that papermakers were doing better to-day than ever before. Lower prices were to be expected, on account of the competition of America and other countries. The paper trade, however, gave employment to many people, and in the production of a ton of paper he computed that 50 per cent. of the cost went in wages. He advocated the placing of orders at home, instead of giving them to foreigners.

The PRESIDENT next submitted "The Stationers' Social Society," and hoped that it would long continue to flourish. The toast was an important one, and he felt he could not do it justice, even if he possessed the eloquence of his neighbour on the right. He congratulated the members on the fine day they had had, and spoke in high terms of the social feeling created by meetings of this kind. That was one of the reasons that the Society should continue to flourish. They wanted more heart put into them for the purposes of trade, and he looked to this Society to that end. If the trade was not what it should be, or not what they would like it to be, let them hope that there was a silver lining and a good time coming. He could not fix a date; he wished he could. In conclusion he congratulated the Society upon the success achieved, and as the President of the year, he thanked them for the large attendance on the present occasion.

Mr. MELVIL BARNARD responded. He said the Society was honoured in having as its president an Alderman and one of the sheriffs of the City of London, who, notwithstanding the many calls upon his time, had always given the members the pleasure of his presence. With such interest in the Society he had no doubt that it would continue to flourish.

The toast of "The Visitors" was submitted by Mr. C. D'OYLEY MEARS. He referred to the great pleasure they felt in having visitors present at their gathering. The toast, he said, was an important one, and he had great pleasure in coupling with it the names of Mr. H. R. Monckton and Mr. Sam Gill, both gentlemen duly responding.

Mr. Alderman STRONG next submitted "The Chairman." He hoped they would recognise the difficult position he was in in having to deal with such a big subject in so short a time. A past president had suggested to the visitors to go to manufacturers direct with orders, and he (the speaker) pointed out that he had spent a long life in the paper trade, and he had nothing more substantial than paper to live upon for many years. A long time had been bestowed to protect the consumer from the manufacturer, and until they had acquired that knowledge, avoid the papermakers direct and go the honest intermediary. This was too painful for joking, and at a social meeting of this kind they dropped all divisions. In referring to the toast he said their Chairman, whose character in the commercial world was so widely known, shed a lustre upon any Association with which he found himself connected.

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The PRESIDENT briefly responded, expressing his thanks to Mr. Alderman Strong for his remarks, and to those present for the friendly way in which they had been received. It afforded him (the speaker) great pleasure in being amongst them to-day, and he greatly appreciated the way in which they had supported him in the chair.

An excellent musical programme was arranged, the contributions by the Ariel Vocal Quartette being very pleasing. Mr. E. J. Bristow and Mr. C. F. Frood contributed several songs in good style. Mr. Albert Jorden was the accompanist.

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Paper Mill Management and Accounts.
Alphabetical Table of French Papermakers.
Ditto, in Departments.
List of Railway Stations in France adjacent to Paper Mills, with the Distance from Paris.
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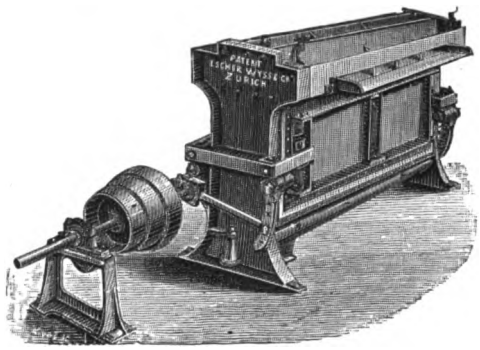

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The Copyright Laws.

Lord Herschell's New Bill and its Effect upon Canadian Interests.

Mr. Richard T. Lancefield, of the Public Library, Hamilton, Canada, has issued a pamphlet in which he discusses the probable effect of Lord Herschell's Copyright Bill upon the book trade of the Dominion. Mr. Lancefield says:—"The new copyright Bill, recently introduced by Lord Herschell into the British House of Lords, intitiled, 'An Act to consolidate and amend the law relating to Copyright,' deserves some attention from Canadians. At the annual dinner of the Society of Authors, held at London, May 2nd, 1898, Sir Martin Conway was good enough to say that Canadian statesmen had frankly recognised the rights of British authors, and that a Canadian Bill would likely be passed which would be eminently satisfactory to English authors and to the Canadian people. It is, of course, pleasing to hear such an eminent authority as Sir Martin Conway speak in this flattering manner of Canadians and the proposed Canadian Bill. It may, therefore, be said at once that if Canada is to be allowed to pass and enforce its own copyright legislation, the rights of British authors being frankly recognised therein, this new Bill requires little attention. But if Canadian copyright legislation is to continue to be restricted by Imperial legislation, a comparison of some conditions of the present law with those in the proposed Bill may be interesting.

"Under the present Imperial law, first publication of a work in the United Kingdom secures copyright for the work throughout Her Majesty's dominions. At the present time, in order to secure both Imperial and United States copyright, the publishers of the United States have to publish first in the United States and first in the United Kingdom. It is presumed that simultaneous publication in each country is equivalent to first publication in each country. This frequently necessitates a delay of several days in order to ship a supply of the work from New York to London. Lord Herschell's new Bill makes this point more definite. He proposes in effect that first or simultaneous publication in any part of Her Majesty's dominions shall secure copyright for the work throughout Her Majesty's dominions.

"This new clause of Lord Herschell's Bill will no doubt be gratefully accepted by the publishers of the United States. The ambiguity in the old law is to be swept aside, and first or simultaneous publication in any part of Her Majesty's dominions is to secure Imperial copyright. This will not affect Canada, provided Canada is allowed to enact and enforce its own copyright legislation. Otherwise this new clause will be altogether to the advantage of the United States publisher. Under the liberal provision of this clause, the United States publisher will no longer be under the necessity of losing several days in sending copies of a work to London. He will not lose a single day. He will simply have to ship his supply to some Canadian point, just across the United States border, publish simultaneously in both countries, and he will have secured copyright throughout the whole English-speaking world.

"Another point is worthy of consideration. At the present time the British law is not quite clear as to who may secure copyright in the United Kingdom. It is certain that a British subject, and probable that an alien, are entitled to copyright. The United Kingdom has an International Copyright Convention with France and other countries. The United Kingdom is also a member of the Berne Copyright Convention. The United States has steadily refused to enter into an International Copyright Convention with the United Kingdom. Nor will the United States enter the Berne Convention. Despite the selfish spirit thus exhibited, Lord Herschell proposes to sweep aside all doubt on an important point, by granting copyright throughout Her Majesty's dominions to an author, whether he is or is not a British subject, without any condition as to manufacture.

"The Authors' Society of the United States should certainly convene a special meeting, and decide to have a dinner, as a fit and proper mode of celebrating this crowning act of generosity on the part of 'John Bull.' At the same time, the members might exercise their wit at the expense of 'Uncle Sam' who is, at present, somewhat more selfish in regard to this question. It may be, of course, that Lord Herschell thinks the United States can still be coaxed into eliminating its manufacturing clause. This may happen; but unfortunately, public opinion in the United States seems to assert that the manufacturing clause is there to stay; although a great many think that the 25 per cent. duty on books is quite enough protection without the manufacturing clause.

"For some time back, United States publishers have been accepting Lord Herschell's proposed law as an accomplished fact. Here is the copyright notice on a new book, published by Funk and Wagnalls Company, New York and London:

"COPYRIGHT, 1898, BY
FUNK & WAGNALLS COMPANY
[Registered at Stationers' Hall, London, England]
Printed in the United States of America

"This would seem to indicate that the publishers printed the book in the United States as they are forced to do to secure copyright; that they entered the book at London to secure Imperial copyright; and that they will supply the British and Canadian markets from New York.

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Many similar instances could be quoted to show the great advantage that the authors and publishers of the United States have over their confrères in the British possessions. There is another way in which the United States publisher enjoys an advantage. The well-known "Colonial" libraries are issued by the British publishers for export to British colonies. But the United States publisher can dictate to the British publisher and absolutely forbid him selling the 'Colonial' edition of certain books to Canada, a British colony. This is not a supposititious case. It is a fact. It has been done. As the original English editions of these books are fully as high, if not far higher, in price than the United States editions, the practical effect of this dictation is that Canadians have to buy their supply from the United States publisher. Surely this is most unfair to British and Canadian manufacturing interests, as well as an insult to Canadian national sentiment.

"The present arrangement is a tremendously one-sided one, with the advantage altogether too much on the side of our neighbours. Here is the first section of Lord Herschell's Bill :—

"1. The author of an original literary or artistic work first published in any part of Her Majesty's dominions, or first published simultaneously therein and elsewhere, shall have copyright in his work throughout Her Majesty's dominions, whether he is or is not a British subject.

"What will be the effect on Canada should this section become law?

"The Parliament of Canada has frequently asserted its right to enact its own copyright law. But just as frequently the Parliament of Canada has been advised that assent will be refused to any copyright Act passed by it that conflicts with Imperial legislation. The Suspended Acts of 1872, 1889 and 1895 speak for themselves on this point. The Imperial Government has been repeatedly memorialised as to the strong feeling in Canada at the anomalous position in which Canadians are placed owing to the operation of the present Imperial Copyright Act. Canadians cannot secure copyright in the United States unless they manufacture their books in the United States. Canadians bitterly resent the fact that United States authors are able, by first publication in London, to secure copyright in Canada, without manufacture either in the United Kingdom or in Canada. Lord Herschell's Bill, with its more definite proposition as to how copyright may be secured, and who may secure copyright, will still further intensify the position. An earnest and vigorcus protest must be entered from Canada. Canadians will never consent to the proposition giving copyright in Canada to publishers in the United States, without manufacture in Canada, as long as Canadians are denied copyright in the United States on similar terms. If our fellow British subjects in the Old Land would only attempt to realise Canada's geographical position, side by side with the United States, they would be better able to appreciate why Canadians feel so strongly on this point.

"Part II. of Lord Herschell's Bill, dealing with Colonial copyright, is deserving of careful attention. Her Majesty in Council is given power to modify this new Act in its application to colonial legislation, provided suitable provision is made for the protection of works first published in other parts of the British dominions. So far as Canada is concerned, this clause may allow of Her Majesty in Council assenting to such an agreement as the Hall Caine compromise, or any Bill drawn up by the Canadian Goverment. It is to be hoped this may be the case.

"The clauses relating to importation are important. The importation of foreign reprints of British copyright books is to be prohibited in the case of any colony which will agree to collect, for the copyright owner, a reasonable percentage on imported foreign reprints, and to stamp the words "Foreign reprint" on every copy imported whether published before or after the commencement of this Act. This raises the old complaint against the collection of the royalty duty. This duty has not been collected in Canada since 1895. Canadians argued that they might far better pay a license duty on each copy printed in Canada than to have a royalty duty collected on imported copies. This would help Canadian printers and other workmen, instead of helping the printers in the United States. But the British publishers scoffed at this most reasonable proposition from Canada. Further, the royalty duty was supposed to be collected for British authors; but it was found that the Canadian Government was asked to collect the royalty duty on books by United States authors—which was a very cool proceeding, to say the least. It was little wonder that the Canadian Government refused to continue the collection of the royalty duty on imports.

"Part III. of Lord Herschell's Bill deals with International Copyright. Even this part, from a Canadian point of view, is anything but satisfactory. Thus, the present law, 49 and 50 Vict., c. 33, s. 4, authorises Her Majesty in Council to make an order with respect to a foreign country, when that foreign country has made provision for the protection of authors of works first produced in the United Kingdom. Lord Herschell seems determined to eliminate all idea of producing books in the United Kingdom. "Produced in the United Kingdom" means clearly enough that the work should be manufactured, if not also written, in the United Kingdom. Lord Herschell is evidently not enamoured of this idea. He seems to prefer the more ambiguous expression "published," which may or may not mean manufacturing. In Lord Herschell's new Bill, sec. 38, subsec. (i) the word 'published' is substituted for the word 'produced,' as in the present

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Act. Should it happen in the future that the United States is included in an Order in Council by Her Majesty, those acquainted with the facts of the case can readily see what a wonderful difference there would be in favour of the United States publisher by the substitution of the word 'published' for the more definite word 'produced.' If Canadian copyright legislation is to be restricted by Imperial legislation, it is evident that a formal protest from Canada should be entered against certain sections of this new Bill."

Company Registrations.

P. and W. MACNIVEN, Ltd.

Registered with a capital of £25,000, in £10 shares, to acquire the business of stationers, etc., at present conducted by a firm with similar title at Blair-street, Edinburgh, and to carry on the same. The signatories are:—James Henderson, wholesale stationer, Edinburgh; W. Henderson, wholesale stationer, Edinburgh; J. Cairns, wholesale stationer, Edinburgh; G. A. Grieve, wholesale stationer, Edinburgh; J. Stevenson, cashier, 239, Dalkeith-road, Edinburgh; G. S. Donaldson, Edinburgh; W. M. Anderson, solicitor, Grangemouth.

SOUTHWOOD, SMITH AND CO., Ltd.

Registered with a capital of £35,000 in £1 shares, to acquire the business carried on as Southwood, Smith and Co., and to carry on the business of printers and publishers. The first directors—to be not less than two nor more than seven—are to be nominated by the subscribers. Qualification, 100 shares. Renumeration as the company may decide.

CASTELL BROS., Ltd.

Registered with a capital of £75,000, in £1 shares, of which 30,000 are six per cent. cumulative preference, to acquire and take over as a going concern the business now carried on at 39, Clerkenwell-road, London, under the style or firm of Castell Bros, to enter into an agreement with Henry Castell and John Castell, and to carry on the business of wholesale and retail export and manufacturing stationers, printers, stereotypers, electrotypers, photographic printers, lithographers, engravers, dye sinkers, envelope manufacturers, bookbinders, account book manufacturers, machine rulers, papermakers, plain and fancy box makers, cardboard manufacturers, railway ticket manufacturers, booksellers, publishers, Christmas card manufacturers and publishers, playing card manufacturers, print sellers, frame makers, etc. The subscribers are:—H. B. Castell, 39, Clerkenwell-road, E.C.; J. Castell, 39, Clerkenwell-road, E.C.; H. Castell, 39, Clerkenwell-road, E.C.; G. Bennett, 39, Clerkenwell-road, E.C.; Mrs. J. Castell, 70, The Avenue, Beckenham; Mrs. H. Castell, 13, Wedderburn-road, N.W.; Miss E. Castell, 13, Wedderburn-road, N.W. The first directors—to number not less than three nor more than seven—are H. Castell, J. Castell, and H. B. Castell. Qualification, £1,000.

The Bouverie Press, Ltd.

The following are the principal creditors, viz.:—

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H. Anderson, London	£45
Ashley and Smith, London	11
G. A. De Beer, London	32
Jas. Boyes, London	32
A. Brown, London	17
C. E. Byles, London	6,854
J. B. Byles, London	800
L. D. Byles, London	995
H. W. Caslon and Co., London	97
J. R. Catlin, London	30
— Cavenaugh, ——	12
W. Clark, London	274
Feltham and Co., Ltd., London	52
J. Gay, London	997
F. E. Goodway, Colchester	19
H. Green, London	900
Griffiths, London	1,700
Hackney, London	358
Hart Cycle Co., Wolverhampton	21
Hop Bitters Co., Ltd., London	14
T. J. Hunt, London	53
E. Judd, London	13
G. F. Kimber, London	25
H. W. Leverton, London	22
National Telephone Co., Ltd., London	38
W. J. Pelhybridge, London	40
W. H. Rogers and Co., London	382
F. Sims, London	10
Star Newspaper Co., Ltd., London	11
P. Symes, London	30
Winsor and Newton, Ltd., London	53

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NEW ROTARIES FOR AUSTRALIA.—The Melbourne *Argus* and *Australasian* have ordered two large web perfecting presses from Messrs. R. Hoe and Company. The same firm has just shipped three big presses to the Sydney *Daily Telegraph*, and is making two more for the Melbourne *Age*. It is also gratifying to know that Messrs. R. Hoe and Company are now putting in the third double supplement press ordered within a year by the San Francisco *Bulletin*.

THE 1898 Coaching Calendar, issued from the offices of the *Road*, is just published, and in the form of a wall sheet contains particulars of the routes, times, and fares of the various coaching tours from London and in the provinces. We believe this is the only calendar of the kind published, it is presented free to each subscriber to the *Road*, or may be purchased for sixpence.

THE new "Harmsworth" monthly magazine is expected to appear early in July. We understand that the price has been fixed at threepence.

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
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A Ba.	55	21¾	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C.	60	23¾	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca.	65	25¾	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D.	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da.	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E.	83	32¾	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea.	91	35¾	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F.	95	37¾	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa.	100	39¾	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G.	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga.	113	44¾	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H.	120	47¾	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha.	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I.	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z.	210	82¾	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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THE INSTITUTE OF

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OF THE BRITISH EMPIRE.

A meeting was held at the St. Bride Institute last week, to consider the advisability of forming an Association bearing the above high-sounding title. As to what transpired we are unable to inform our readers, our representative being refused admission, as it was a "strictly private preliminary meeting," but we understand that the objects of the proposed Institute are to furnish a social centre for employers and representative men employed or interested in the various associated crafts; to aid, promote, assist, extend, and encourage the study and practice of the art of printing and its kindred trades by periodical meetings of its Fellows and Associates, and by such other means as are specified in the proposed Charter; the reading of papers on topics affecting their interests, combined with entertainments and social relaxation; the formation of benevolent, orphan and annuity funds; the creation of a court of arbitration; the encouragement and development of philanthropic work, and the discussion of social and technical questions of the day. The Institute is to be available for membership by employers and representative men of the following trades and occupations:—Artists in colours, art printers, art stationers, authors, album makers, addressing and wrapping contractors, advertisement contractors, black and white artists, bookbinders, bookbinders' block and tool cutters, bookedge marblers, book printers, booksellers, bronze powder manufacturers, calico printers, cardboard manufacturers, charity and trade officials, Christmas card makers, Christmas card publishers, chromographic printers, collotype printers, commercial printers, commercial stationers, composing machine firms, copperplate engravers, copperplate printers, correctors of the Press, dandy roll manufacturers, designers, die sinkers, draughtsmen, drawing instrument makers, editors, electrical engineers, electrotypers, electrotype agencies, embossers, engravers' boxwood block makers, etchers, fancy stationers, firms' representatives, floor-cloth printers, gold and silver beaters, gold and silver blockers, heraldic artists, heraldic printers, illuminators, index compilers, inventors, iron show tablet makers, journalists, law printers, law stationers, letterpress printers, librarians, lithographic artists, lithographic printers, machine rulers, magazine printers, managers, manufacturing stationers, map makers, music engravers, newspaper proprietors, newspaper publishers, news printers, numerical printers, paper agents, paper enamellers and stainers, paper gummers, papermakers, papermakers' chemical manufacturers, paper material merchants, parchment manufacturers, pen manufacturers, playing card makers, press agencies, printers' brassfounders, printers' brokers, printers' engineers, printers' export agents, printers' furnishers, printers' import agents, printers' joiners, printers' roller makers, printers' valuers, printing ink makers, printing machine manufacturers, print sellers and publishers, process engravers, process printers, publishers, relief stampers, reporters, retail stationers, rubber stamp makers, seal engravers, sealing wax manufacturers, stereotypers, strawboard makers, technical instructors, technical photographers, tinplate printers, trade valuers, typefounders, typefounders' outfitters, vellum binders, wall-paper printers, wholesale stationers, wood letter cutters, wood engravers, zincographers, and any others. In fact all representative men connected in the slightest degree with any of the above, in London, the Provinces, and throughout the British Empire.

THE PRESS BAZAAR.

The arrangements for the Press Bazaar on behalf of the London Hospital, to be held at the Hotel Cecil on June 28th and 29th, are now fairly complete. The London papers are, says the *Daily Chronicle*, acting in unison, and are seeking nothing in the way of separate advantage, still less of advertisement, in this direction. The case of the London Hospital is one of extreme gravity, and it is for this reason, and this reason alone, that the newspaper Press of London has combined in its interest. Many journals which are not able to hold stalls themselves have expressed complete sympathy with the movement, and will do their best to aid it. The following is the list of newspapers maintaining stalls:—

The Artist.	*The Observer.*
Black and White.	*The Sunday Times.*
The Daily Chronicle.	*Punch.*
Financial News.	*The Queen.*
The Gentlewoman.	*The Referee.*
The Graphic.	*The Weekly Dispatch.*
The Daily Graphic.	*The Stage.*
The Hospital.	*The Strand Magazine.*
The Illustrated London News.	*The Sun.*
The Sketch.	*The Tablet.*
The Ladies' Pictorial.	*Truth.*
The Jewish Chronicle.	*Vanity Fair.*
The Lady	*Westminster Gazette.*
The Morning Post.	*The World of Dress.*
The Daily Mail.	
The Evening News.	*London Hospital Staff.*
The Naval and Military Magazine.	
	Refreshment Stall.

A wide discretion has been allowed to individual newspapers as to the contents of their stalls, and several selections have already been made. Thus the *Morning Post* will hold a flower stall, and the *Daily Mail* a book stall.

Another feature of the bazaar will be the publication of a Press Bazaar Book, consisting of autograph contributions from living European and English authors, and special sketches by famous English artists.

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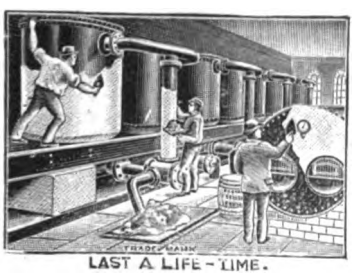

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Paper, Paper Stock, Chemicals, &c.

Weekly List from Latest Sources.

PAPER.

Quantity	From	Importer	Port
10 cases	Antwerp	De Jonge and Co	New York
9 ,,	,,	Kupfer Bros	,,
18 ,,	,,	De Jonge and Co	,,
3 ,,	,,	Wagner and Co	,,
2 ,,	,,	Kueffel and Esser	,,
3 ,,	Bremen	Isaacs, Vogt and Co	,,
9 ,,	Hamburg	Dingelstedt and Co	,,
5 ,,	,,	Hug & Boskowitz	,,
4 ,,	,,	A. Kraut	,,
2 ,,	,,	Richard and Co	,,
35 ,,	,,	Lindenmeyr and Sons	,,
7 ,,	,,	Knauth, Nachod & Co	,,
50 ,,	Havre	Druckleib and Co	,,
22 ,,	,,	Richard and Co	,,
2 ,,	Liverpool	Favor, Ruhl and Co	,,
2 ,,	,,	Kupfer Bros	,,
38 ,,	,,	Dennison Mfg. Co	Boston
18 ,,	,,	,,	,,
2 ,,	,,	To order	,,
2 ,,	London	A. D. Maclachlan	,,
55 ,,	Marseilles	Sheldon and Co	New York
21 ,,	Rotterdam	A. Kraut	,,
43 ,,	,,	Hensel, Bruckmann	,,

MANILLAS.

53 bales	Antwerp	Salomon and Co	New York
193 ,,	,,	Castle and Gotheil	,,
184 ,,	Liverpool	Butterworth and Co	Boston
103 ,,	,,	Train, Smith and Co	,,
212 ,,	,,	Butterworth and Co	,,
154 coils	,,	Dutton and Co	,,

CHEMICAL FIBRE.

60 tons	Copenhagen	F. Bertuch and Co	New York

RAGS.

1031 bales	Alexandria	Seymour Paper Co	New York
192 ,,	Antwerp	A. Kazenstein	,,
45 ,,	,,	Castle and Gotheil	,,
112 ,,	,,	Train Smith and Co	Boston
146 ,,	,,	Salomon and Co	,,
210 ,,	,,	Butterworth and Co	,,
76 ,,	,,	Crocker, Burbank	,,
280 ,,	,,	Spaulding Bros	,,
182 ,,	Copenhagen	Jessup and Moore	New York
246 ,,	,,	Salomon & Co	,,
331 ,,	Genoa	Jessup and Moore	
60 ,,	Hamburg	Lewy Bros	,,
97 ,,	,,	Jessup and Moore	,,
62 ,,	,,	A. Katzenstein	,,
178 ,,	Havre	Castle and Gotheil	,,
167 ,,	,,	J. Pirnie	,,
201 ,,	,,	Train, Smith and Co	,,
606 ,,	Hull	Butterworth and Co	Boston
307 ,,	London	A. Kazenstein	New York
267 ,,	,,	J. Pirnie	,,
136 ,,	,,	Crocker, Burbank & Co	Boston
202 ,,	,,	Butterworth and Co	,,
16 ,,	,,	Dutton & Co	,,
41 ,,	,,	Train, Smith and Co	,,
20 ,,	,,	E. P. True	,,
33 ,,	,,	Dutton and Co	,,
318 ,,	Liverpool	Train, Smith & Co	,,
24 ,,	,,	W. F. Corne	,,
127 ,,	,,	Butterworth and Co	,,
70 ,,	,,	W. F. Corne	,,
130 ,,	,,	Butterworth & Co	,,

WASTE PAPERS.

101 bales	Antwerp	Castle and Gotheil	New York
2 ,,	Copenhagen	Salomon and Co	,,
41 ,,	London	Darmstadt and Scott	,,
80 ,,	,,	Wheelwright Paper Co	Boston
,,	,,	Train, Smith and Co	,,

ALKALI.

?ks.	Liverpool	Linder and Meyer	Boston

BLEACHING POWDER.

Quantity	From	Importer	Port
36 cks.	Antwerp	Fuerst Bros	New York
72 ,,	,,	F. A. Reichard	,,
52 ,,	,,	To order	Philadelphia
68 ,,	,,	H. Martin	,,
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VOL. XXIX. No. 25 LONDON: JUNE 24, 1898. EVERY FRIDAY. PRICE SIXPENCE.

Markets for British Paper, &c., &c.

The Quantities, with Values, Exported to Various Countries During 1897.

In our issue of January 14th we published statistics dealing with the exportation of British paper for the year 1897, the total quantity amounting to 1,003,921 cwts. of the value of £1,523,401. It is to be regretted that the export trade is not cultivated more actively, as the above figures, compared with those of the previous year, show a decline in quantity of 56,319 cwts., and in value £106,570. From an official publication on the trade of the United Kingdom, just issued, we are enabled to show the various markets receiving British paper, and the extent and value of the shipments made during 1897:—

WRITINGS, PRINTINGS & ENVELOPES.

Countries.	Cwts.	Value.
Russia...	957	£5,478
Sweden	2,924	5,943
Norway	2,942	3,747
Denmark (including Iceland and Greenland) ...	3,898	5,578
Germany	4,730	15,056
Holland	17,472	25,476
Belgium	11,837	25,979
France	40,776	£70,828
Portugal	420	1,672
Spain	2,351	4,989
Turkey	838	2,535
Egypt...	1,451	3,211
East Africa: Portuguese Possessions	750	2,007
China	6,634	12,928
Japan	36,095	40,567
United States of America	10,143	24,121
Mexico	527	1,450
Peru	1,342	2,044
Chile	2,382	5,335
Brazil	6,175	11,954
Uruguay	2,688	5,387
Argentine Republic ...	10,128	23,676
Other Foreign Countries	5,255	13,078
Total to Foreign Countries	172,715	£313,039
Channel Isles	1,312	£1,906
Malta and Gozo	761	1,630
South Africa: Cape of Good Hope ...	61,926	91,657
Natal	16,319	26,861
Mauritius and Dependencies	1,502	2,638
British East Indies: Bombay	27,932	41,389
Madras	8,610	15,057
Bengal	14,080	29,082
British Burmah	1,455	2,369
Straits Settlements ...	4,439	8,850
Ceylon	6,074	11,009
Hong Kong	2,533	5,507
Australasia: West Australia	13,531	25,255
South Australia... ...	33,663	35,583
Victoria	132,950	136,968
New South Wales ...	90,701	116,265

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	Cwts.	Value.
Queensland	21,074	£30,312
Tasmania	4,949	6,400
New Zealand	42,748	61,714
Fiji Islands	99	173
British North America :		
Canada	18,793	31,816
Newfoundland	563	1,512
British W. India Islands	5,517	10,909
,, Guiana	1,607	3,070
Other British Possessions	1,881	5,667
Total to British Possessions	513,019	£703,599
TOTAL	685,734	£1,016,638

HANGINGS.

	Cwts.	Value.
Sweden	688	£2,465
Germany	2,950	11,559
Holland	2,253	7,230
Belgium	3,081	11,127
France	3,402	11,505
Spain	1,021	3,049
Italy	435	1,148
China	680	1,127
United States of America	2,569	8,108
Chile	1,300	2,230
Other Foreign Countries	2,818	7,593
Total to Foreign Countries	21,806	£67,231
South Africa :		
Cape of Good Hope ...	8,708	£23,141
Natal	3,074	9,168
British East Indies ...	1,429	3,029
Australasia :		
West Australia ...	749	1,612
South Australia ...	2,565	5,089
Victoria...	13,272	23,675
New South Wales ...	7,047	12,800
Queensland	236	464
Tasmania	1,747	3,146
New Zealand	9,070	18,121
British North America :		
Canada	603	1,398
Newfoundland	2,302	3,014
Other British Possessions	1,241	2,826
Total to British Possessions	52,133	£107,513
TOTAL	73,939	£174,744

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(Including Playing Cards).

	Cwts.	Value.
France	534	£1,864
Other Foreign Countries	3,205	6,208
Total to Foreign Countries	3,739	£8,072
South Africa :		
Cape of Good Hope ...	4,181	£8,103
British East Indies ...	4,866	9,762
Australasia	18,206	22,979
Other British Possessions	1,379	3,223
Total to British Possessions	28,692	£44,067
TOTAL	32,431	£52,139

OTHER KINDS

(Unenumerated, and Articles of Paper except Papier Mache).

	Cwts.	Value.
Russia...	747	£2,990
Sweden	1,036	2,853
Norway	532	1,268
Denmark (including Iceland and Greenland) ..	2,343	4,173
Germany	8,572	19,947
Holland	6,212	8,062
Belgium	4,460	8,512
France	7,846	32,583
Spain	1,625	3,054
United States of America	9,547	34,026
Mexico	230	1,097
Chile	1,267	2,521
Brazil	1,335	2,209
Argentine Republic ...	1,923	2,936
Other Foreign Countries	11,372	14,056
Total to Foreign Countries	59,047	£140,427
Channel Islands	6,906	£8,097
South Africa :		
Cape of Good Hope ...	33,345	28,145
Natal	7,929	7,265
British East Indies ...	10,805	12,659
Australasia :		
West Australia ...	6,004	5,376
South Australia ...	9,116	6,780
Victoria...	14,933	15,851
New South Wales ...	34,692	27,772
Queensland	9,490	6,327
Tasmania	3,520	2,500
New Zealand	4,510	5,476
Fiji Islands	31	25
Canada	2,091	5,702
British W. India Islands	1,949	2,497
,, Guiana	2,297	1,145
Other British Possessions	2,938	4,224
Total to British Possessions	150,676	£140,531
TOTAL	209,723	£280,958

BRITISH engineers should keep their eye on Canadian requirements. American engineers, by the way, are showing considerable activity in cultivating Canadian business. The Bagley and Sewall Company have recently opened an agency for Quebec, New Brunswick, Novia Scotia and Newfoundland at Montreal, and have appointed Mr. E. Bradley, C.E., as agent, with office located at No. 3 Place d'Armes Hill, Montreal.

GERMAN CAPITAL IN THE UNITED STATES.—Mr. Ernest B. Behrend, of Germany, is the prime mover in the project for building a paper and pulp mill at Erie, Pa., concerning which negotiations have recently been completed. The nominal capital will be 1,000,000 dols.

ACTION OF CEMENT ON IRON.—According to the American Society of Chemical Engineers it has been noted that wherever a mixed lime and cement mortar comes in contact with the iron and steel work of suspension bridges, &c., corrosion takes place.

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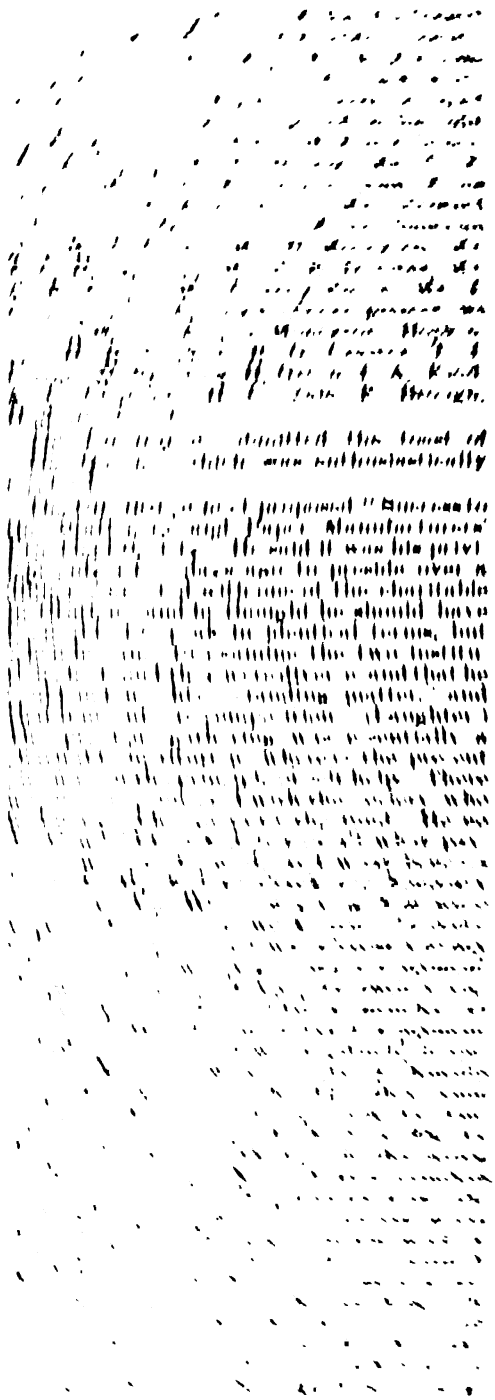

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the monies paid, he came across names who at one time held a good position in the trade, but on account of unfortunate circumstances, were now in receipt of the society's benefits. It was the duty of the younger members in the trade to join. Referring to the committee, they deserved the highest praise, and he took the opportunity of thanking the hon. secretary, Mr. West. (Applause.)

Mr. Alderman and Sheriff FRANK GREEN submitted the toast of "The Chairman." He referred to the time-honoured name of Truscott, a name they greatly esteemed. The late Sir Francis Truscott was associated with the society for many years, and he devoted his time and energy to the best interests of his fellow citizens. They were glad to see that his mantle had fallen upon most worthy shoulders, upon one who would carry out to his uttermost the example set him by his father. To the name of Truscott he was sure fresh lustre would be added by their chairman. (Applause.)

Mr. F. WEST then read a list of the subscriptions made during the evening.

The CHAIRMAN, in acknowledging the toast of his health, said it was his father who made the name of Truscott, and he had only to do his best to maintain its traditions. He thanked those present for the way they had supported him that evening, and he was pleased to inform them that the subscriptions amounted to a total of £326 17s. 6d. He was glad to have the support that evening of Mr. Blades, who had promised to become a life member. (Applause.)

Mr. Alderman T. V. STRONG proposed "The Health of the Hon. Secretary, Mr. F. West," whose devoted labours on behalf of the interests of the society covered a quarter of a century.

Mr. F. WEST responded, and gave some very interesting particulars of the early history of the society.

The following talented artistes contributed a choice programme of songs, etc., during the evening:—Miss Gertrude Snow, Miss Lucie Johnstone, Mr. Charles Ellison, and Mr. Herbert Schartau. Mr. Walter Churcher contributed humorous sketches, and Mr. Tom Browne gave an exhibition of his celebrated whistling powers.

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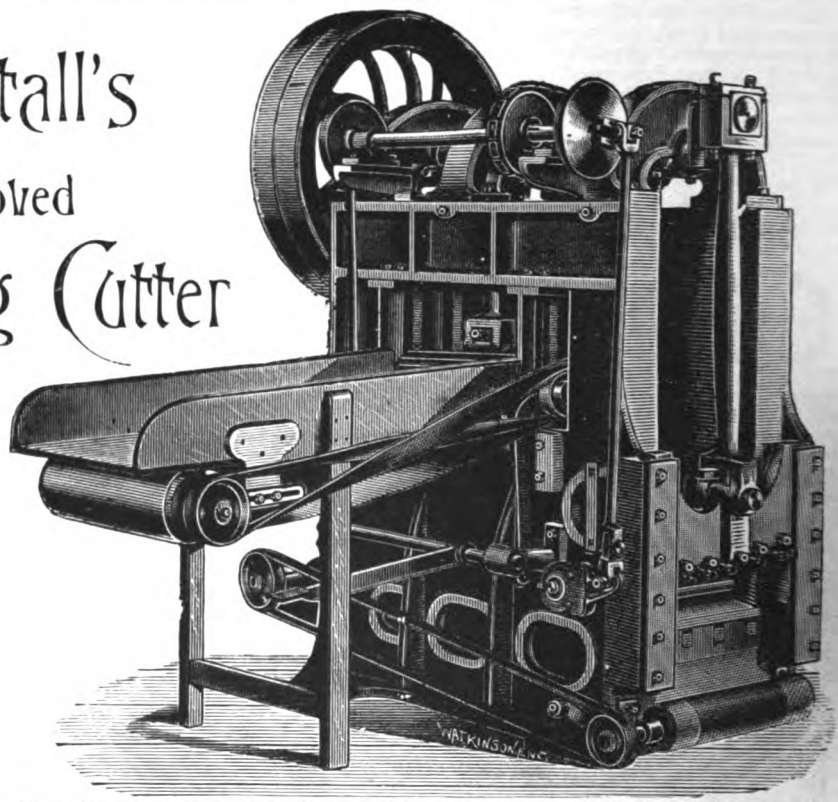

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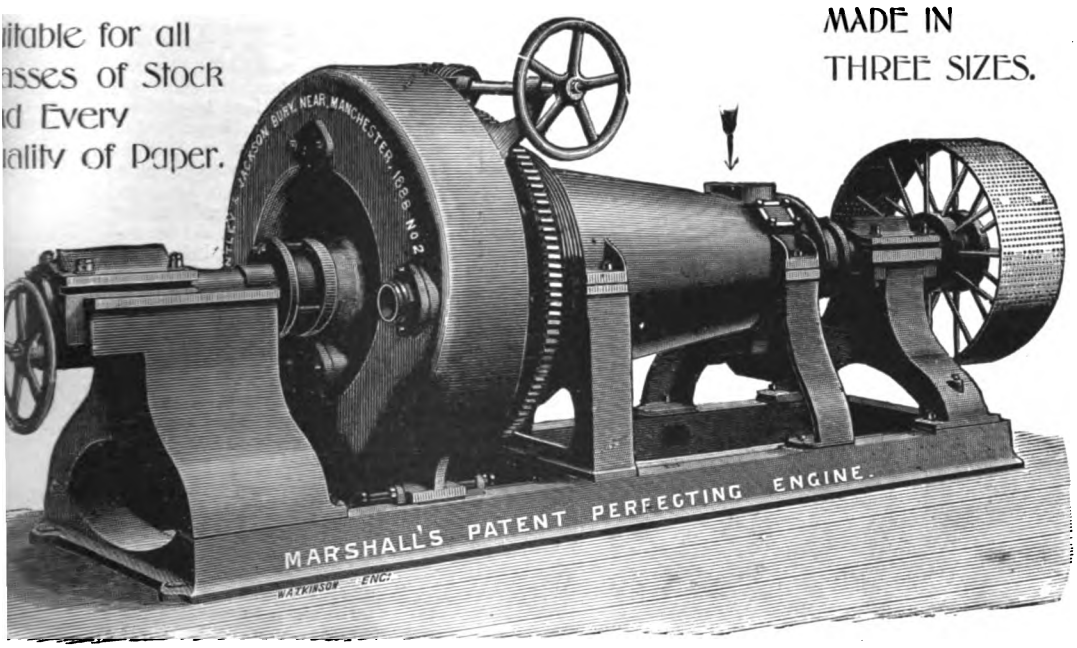

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Evolution of Digesters.*

By Martin Griffin.

(*Concluded.*)

It is a well known fact that in hotels, for instance, where a large quantity of hot water is used in the morning and very little during the rest of the day, the pipes being thus subjected to frequent and comparatively great changes of temperature, this very movement of which I have spoken, to use plumber's parlance, "kills" them. That is, they lose all elasticity, become brittle and crack, showing a crystaline fracture. Now, I am inclined to think that there is danger of such a result with the lead lining of the Graham boiler, even if the cementation remains intact. The lead, under this constant, enormous molecular stress, will degrade, become brittle, porous, crack, even drop off. Then the boiler is ruined, for the lining, under such circumstances, can neither be repaired nor replaced.

I regret to say that Major Michaelis did not live to see the fulfilment of his prophecy, which came true in every particular. The lining of the boiler remained clean, and showed no apparent defects caused by the enormous stress upon it until some 200 or more cooks had been taken off. Then there began to appear little star shaped defects, showing hard crystals and tiny cracks. These were, of course, cut out and new lead burned in, but soon they multiplied so fast that it was impossible to repair them all. These in turn became black, dirty scabs, and later large masses of them would bulge out at the seams. It was then only a short time until the whole lining became a dirty, crumbling mass, and the digester unsafe. It was impracticable to replace this lining, and so the Graham process came to an end. Upright Graham digesters were placed in one mill with much less satisfactory results.

Reference has been made to the tendency of lead linings in upright digesters to sag. One would hardly have thought it possible for this lining to have stretched to the extent it did. In a very short time it was nearly all in the lower half of the digester, and the top with hardly no protection. Of the many different methods for lining with lead, this looked at first the most promising, but in the end it proved the least.

With the failure of lead lining, many manufacturers were still looking for something to patch up their old digesters, and from this to discover yet some durable lining and process preferable to the Mitscherlich, which they were still unwilling to adopt. So we find the American Sulphite Pulp Company lining their upright digesters with glazed tiles about one inch thick, laid in cement, and their Partington digesters with about one inch coating of Portland cement.

In 1892 Charles Curtis and Nathaniel Jones patented a process for lining digesters with blocks of artificial stone composed of Portland cement and ground quartz. The blocks were moulded so as to fit the contour of the digester, and were laid in cement. Several mills were equipped with this style of lining.

About 1890, a digester, known as the "Solomon Brunger," was offered to manufacturers by a prominent company engaged in building paper and pulp making machinery. It consisted of a doubled walled or jacketed vessel of iron, the sheets, nozzle, and manhole connections all welded, as the process employed by the Continental Iron Works, of Brooklyn, in the manufacture of digesters for the soda process. It was expected and claimed for them that the indirect transmission of heat by means of the jacket would deposit a protecting coating of lime and magnesia on the interior walls of the digester, and so protect the iron.

We have now come to the present state of the art, which is simply a vindication of the Mitscherlich lining; and although some slight changes have been made in the method of lining whereby two companies have ventured to build and offer this digester for sale, the honour belongs entirely to the Mitscherlich.

The construction at present in vogue consists in a steel shell one inch thick, rivets countersunk on the inside, vertical, stationary, and about 14 feet by 38 feet to 40 feet high, though smaller sizes have been built. This shell is first lined with sheet lead, having no points of attachment whatever (this is one of the essential claims), so as to provide for a "free movement of the lining" under variations of temperature. It would be interesting to hear the claimant explain how this "free" movement takes place with two heavy courses of bricks laid in and backed up with Portland cement and crushed quartz, and 80-lb. pressure upon same, However, it is interesting to reflect that only a few years ago these same men were straining every nerve to bind fast this unmanageable metal, suffering defeat, as all who rebel against nature's laws must. They would now give it "free movement."

As just intimated, two courses, about 8 to 10 inches of bricks, are laid in cement against the lead lining. These bricks are made from a bastard fireclay, and are partly vitrified, hence are not impervious to moisture and acid fumes. The bricks have no tongues and grooves, but are of shapes adapted to the dimensions of the digester. The joints are finally pointed with glycerine and litharge. The shell of these digesters is required to be perforated with small holes by the insurance companies.

For the work performed they are giving very good satisfaction, but the lead interlining, though protected by 10 inches of masonry, is still rebellious, and leaks are of not infrequent occurrence, showing that destructive agencies are still at work on the lead. It is a wonder to me why manufacturers of sulphite will not study every detail of construction, rather than make costly and indifferent ventures. Why should an absorbent brick be used for lining? Mitscher-

* A paper read by Mr. Martin Griffin before the New York Section of the Society of Chemical Industry (U.S.A.).

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lich, in his first digester, used a beautiful, dense, and vitrified brick, which would absorb no moisture.

The present digester for quick cooking must yet be much improved. The bricks must be vitrified and the lining must be much thicker, so that the shell will not be warmer than about 100 degrees F., and the difference in temperature between the inside and outside will equalise the expansion. This is the only way the life of a lead interlining can be prolonged. The digester will cost more, but repairs and stoppages will be reduced to a minimum. To all of these points Dr. Mitscherlich carefully adapted his process, and time has proved the wisdom of his constuction.

In this brief review of the history of a very important part of one of our largest industries, I have endeavoured to give the principal facts. as a matter of interest to all, and trust that they may be valuable to some of our chemical and engineering friends.

The history of the sulphite digester emphasises again one most important point, conspicuous in the Graham process—that a device, machine, process, or individual, no matter how strong and powerful it may appear, when subject to an undue strain or stress in any of its essential parts, cannot endure; it will fail. Beware, therefore, men of science, to compute carefully the maximum load to be carried in every chemical and mechanical operation in which you engage; whether it be the lining of a digester, the burning of bricks, the transmission of electricity, steam, water, etc., the building of a steam boiler, bridge, or arch, there are no favours to be bestowed, no exceptions to be made.

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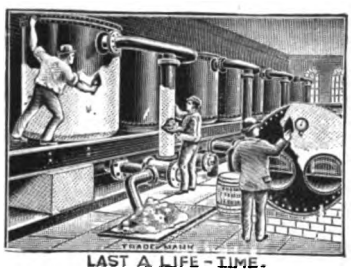

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The Esparto Trade.

Messrs. Ide and Christie, in their June circular, report upon the esparto trade as follows:—During the last four weeks the course of business in this commodity has been very slow, and few transactions of any importance have been negotiated. The heavy arrivals of April have been followed by a very meagre import during May, caused partly by the fact that stocks at the shipping ports had been materially reduced, but mainly by the high rates of freight prevailing. When the sum of the two months' arrivals is considered, however, it will be seen that the trade has received about an average supply, and that the figures of both the five and twelve months' periods are maintained at a satisfactory level. With regard to future supplies shippers and importers are still inclined to act with extreme caution, and hence there has been an entire absence of eagerness to make extensive sales over the autumn and winter months or later. The slow march of events in the war between Spain and the United States rather tends to confirm the reluctance of sellers to add to their engagements, and, in the case of Spanish esparto, business remains practically suspended, through the resolution of shippers to keep off the market. The advance in rates of freight has not made further progress, but as the view is generally entertained that cost of transit is going to remain high till the end of the year, sellers of African have been adhering to their quotations with firmness. Such transactions as have been concluded may be said to have established an advance, from the lowest point touched a few months ago, of at least 5s. a ton.

Spanish arrivals in May were very moderate, and the disparity between the five months' statistics of this and last year amounts to nearly 6,000 tons, the comparative figures being 24,996 tons against 30,956 tons. There has been no business of importance recorded, as sellers still postpone giving out further quotations of new crop contracts until the outlook is clearer. Reports from Spain are fairly reassuring as to the appearance of the new season's growth, but there is little doubt that an increase of taxation is imminent, and this will add to the cost of esparto as well as other exported produce.

Algerian, after the extraordinary receipts of April, came in very meagrely last month, but the total of the five months of the present year, 38,437 tons, still stands well ahead of the 35,804 tons received during the corresponding period of 1897. The record of new business is not large, but prices have been very firm, and the business done rather points to an increase than a diminution of strength. The reserve stocks in Algeria are reported to be small, and their adequate replenishment is threatened by the absorption of labour for the ingathering of the prospectively abundant cereal crops.

Tunisian receipts have been extremely light, but the five months' total has been brought up to 14,489 tons, against 5,638 last year. A small forward business has been carried through at firm prices for both old and new crop. Arrivals at the shipping ports have now almost ceased, and will not be resumed until the autumn, while the existing stocks on the coast are estimated to be no more than sufficient to cover the contracts already made with consumers in this country.

Tripoli imports came to hand to an average extent in May, and increased the year's total to 17,167 tons—or 3,000 tons less than in 1897. The enquiry has been of the smallest, but sellers do not press for orders, and rather advance than reduce the prices recorded last month.

The following is an official summary of esparto arrivals at all U.K. ports during the past month:—

London	1 ton	Cardiff	342 tons
Liverpool	20 ,,	Aberdeen	500 ,,
Dundee	1,113 ,,	Alloa	387 ,,
Granton	2,412 ,,	Tyne	2,414 ,,
Sunderland ...	2,540 ,,		

These figures give a total of 9,729 tons, including 3,527 tons from Spain; 2,079 tons from Algeria; 735 tons from Tunis; 3,374 tons from Tripol; 13 tons from France, and one ton from Belgium.

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NORWAY.

THE total export of pyrites from Norway last year amounted to about 90,000 tons; of copper ore containing 20 per cent. copper, 1,450 tons. More workpeople have been employed in 1897 than at any previous period, and the quantity of pyrites exported, and copper ore produced has never been so great. The exportation of pyrites in 1898 is expected to exceed 100,000 tons.

TARIFF MODIFICATIONS.—The Board of Trade have received through the Foreign Office a despatch from Her Majesty's Consul-General, at Christiania, stating that the whole of the amendments in the tariff of Norway came into force on the 1st inst. The most important alteration is the imposition of a duty on machinery. Motors for steam, water, wind, gas, petroleum, benzine, and electricity, dynamos, and parts of the same, will pay 5 per cent. minimum, 10 per cent. maximum. Other machinery, including locomotives, steam fire-engines, steam winches, donkey engines, etc., for industrial purposes, other technical and agricultural purposes, and for ships' use; also parts of the same, machine packing, cables ("taage"), straps, sewed belts, etc., all in so far as not elsewhere specified in the tariff minimum duty, free; maximum duty 10 per cent.

GERMANY.

A NEW PAPER MILL is about to be opened by the firm of Adam and Co., in Bruckmühl (Bavaria). The owners have bought the wood pulp factory, which hitherto belonged to Herren Leiss and Co. There is a water power of 900-h.p., and there is a junction with the railway. The firm of I. M. Voith, in Heidenheim, have received the order for a large papermaking machine, on which news is to be made. Later on a further machine will be installed.

AUSTRIA.

THE AUSTRIAN TRADE INSPECTORS, in their annual report, state that 301 paper [illegible] establishments were visited, giving [illegible] people, of whom [illegible] female; under [illegible] male and 327 [illegible] very necessary [illegible] rength of the [illegible] rs are from 9 to [illegible] y far is from 10 [illegible] as allowed in 19 concerns for 28 special cases. The request of a sulphite factory to allow women to sort material during the night hours was refused. In two sulphite works Sunday work was petitioned for in order to remake some parcels which were spoiled in the late inundations. Though the owners declared the work to be urgent, the authorities refused the permission, as there was time enough in the ordinary hours. In several cases the rules for the factories were amended by representations made by the inspectors.

UNITED STATES.

PAPER FROM CORNSTALKS.—The Marsden Cellulose Co., of Philadelphia, who make a speciality of cellulose from cornstalks for lining warships, etc., lately arranged with Mr. Thomas Nixon, of Richmond, Ind., to experiment with the shives, leaves, and husks for papermaking purposes. It is now reported that bleached and unbleached wrappings, some grades closely resembling straw, though of a higher finish and finer quality, and boards as tough as the toughest, suitable for book cases and trunks, and many other necessary articles, were turned out by the process employed. The experiments were simple, but complete, and showed the immensity of the success of the departure, if taken up on a large scale.

THE EXPORTS OF PAPER at New York, according to the last weekly list to hand, included: To London, 2,376 packages and 121 bundles; Liverpool, 308 packages; Hull, 58 packages; Glasgow, 282 packages; Antwerp, 844 packages; Hamburg, 1 case, Havre, 1 case; Brazil, 23 packages; B. W. Indies, 508 packages; Australasia, 969 packages; Genoa, 6 packages; and New Zealand, 28 packages.

RAGS were received at New York during May to the extent of 11,024 bales. The supplies were received from the following ports:—Alexandria, 1,031 bales; Antwerp, 617 bales; Bordeaux, 149 bales; Copenhagen, 182 bales; Genoa, 371 bales; Glasgow, 87 bales; Hamburg, 2,156 bales; Havre, 516 bales; Hull, 465 bales; Kobe, 1,890 bales; Leghorn, 641 bales; Liverpool, 310 bales; London, 1,048 bales; Marseilles, 28 bales; Rotterdam, 340 bales; Stettin, 1,133 bales.

AT New York, last month, 941 bales of old papers were received, the total being made up as follows:—From Antwerp, 101 bales; Copenhagen, 2 bales; Glasgow, 250 bales; Liverpool, 247 bales; London, 41 bales.

MANILLA STOCK was imported at New York during May to the extent of 6,425 bales and 2,886 coils. The following lots were received:—From Amsterdam, 330 bales; Antwerp, 1,853 bales and 133 coils; Bristol, 490 coils; Calcutta, 217 bales; Copenhagen, 571 bales; Dundee, 540 bales; Genoa, 316 bales; Glasgow, 33 bales and 380 coils; Hamburg, 1,346 bales and 96 coils; Havre, 315 coils; Hull, 553 bales and 357 coils; Liverpool, 322 bales and 639 coils; London, 344 bales and 378 coils; Marseilles, 98 coils.

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The Wood Pulp Industry.

Items of Interest to Manufacturers, Agents and Buyers.

WOOD PULP and timber are the most important articles of export from Christiania and other Norwegian ports, remarks Mr. Consul-General Dundas, in reporting upon the trade of Norway for the year 1897.

A STEADY advance took place last year in wood pulp, 70,090 tons being shipped from Christiania, compared with 64,302 in 1896.

THE total exportation of wood pulp, wet and dry together, was 259,149 tons, and of cellulose 81,156 tons, against 243,815 tons of the former, and 75,180 tons of the latter in 1896.

FROM Christiansand the exportation of this article to the continent increased 20 per cent., but decreased by 10 per cent. to Great Britain, the continental prices being more favourable. The dry pulp is chiefly exported to England, France, Denmark, Belgium and Holland, but also to Russia, Spain, North America, etc.

THE exact quantity of dry cellulose exported from Norway last year amounted to 74,441 tons, of the value of £626,917, and wet 5,516 tons, of the value of £24,735.

DRY wood pulp (mechanical) was exported last year to the extent of 24,743 tons, of the value of £93,486, and wet 230,575 tons, of the value of £420,376.

THE figures for the previous year were:—Cellulose, dry, 67,980 tons, of the value of £511,652; wet, 6,090 tons, of the value of £20,824. Mechanical, 27,403 tons of dry of the value of £93,547, and 212,808 tons of wet of the value of £340,088.

AT Arendal 1,100,000 kilos. of wood pulp were exported last year to Great Britain.

AT Christiansand last year the exports of wood pulp amounted to 5,509 tons, and of this quantity 3,526 tons went to Great Britain.

CELLULOSE was exported from Moss last year amounting to 3,228 tons.

IN reporting upon the trade of Fredrikstadt for last year the Vice-Consul states that the port of Sarpsborg was visited by four British vessels, all of which were steamers, aggregating 1,705 tons. These were all chartered for the conveyance of pulp wood to England and France.

SINCE the Kellner-Partington Paper Pulp Company, Limited, of Manchester, erected their mills at the Sarpsborg falls a few years ago, they have been yearly extending their business, so that they now employ over 1,000 workmen.

THE latest addition, which the company are now adding to their estate, is a large electric-power station for the accumulation of motive power to be derived from the waterfall. When complete they will be able to supply the surrounding district both with electric light and motive power at a minimum of cost.

THE Kellner-Partington Company is, however, not the only firm who are beginning to utilise the vast water-power which the Sarpfos contains. A new company, the so-called "Hafslund Aktieselskab," which has been floated chiefly with German capital, is also erecting an enormous electric-power station on the opposite bank of the falls, which when complete will be able to supply 25,090 horse-power.

BOTH companies are calculating that the cost of producing the electricity will be so trifling, that they will be able to supply the whole of Fredrikstadt — a distance from Sarpsborg of about 7 English miles—and the surrounding mills and factories advantageously with motive power.

THE Vice Consul at Fredrikstadt adds that, when reporting last year, he mentioned that everything pointed to a rising market in wood pulp, which proved correct, as prices advanced steadily up to October and November, when many of the shippers sold the bulk of their product for 1898. At present the market is weaker, especially for prompt delivery, as the production, owing to the unusually mild winter and good supply of water, has been larger than anticipated.

CHEMICAL fibre was received at New York during May to the extent of 101 tons—60 from Copenhagen, 16 from Hull, and 25 from Stettin.

THE latest official figures dealing with American imports of wood pulp cover a period of nine months, ending March last, and show a heavy depreciation compared with the corresponding period of the previous year, the amounts being 19,744 tons, of the value of 388,018 dols., against 35,652 tons, valued at 661,438 dols. respectively. As stated in our last issue, the imports in March amounted to 2,343 tons, of the value of 53,095 dols., and for the corresponding month of last year 2,686 tons, of the value of 54,643 dols.

IN supplementing the above information, we may point out that Germany exported to the United States 366 tons of wood pulp, of the value of 21,421 dols., during March, the

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month's figures for the previous year being 103 tons, of the value of 5,971 dols. The total imports during the nine months amounted to 1,340 tons, valued at 57,855 dols., as compared with 1,466 tons, valued at 73,406 dols., during the same period of the previous year.

BRITISH NORTH AMERICA shipped to the United States in March, 1,882 tons, valued at 25,652 dols., against 2,252 tons valued at 33,671 dols., imported in March, 1897. During the nine months ending with March, 1898, 16,088 tons were imported, valued at 231,938 dols., against 29,988 tons imported during the corresponding period of the previous year, valued at 421,841 dols.

OTHER European countries were imported from in March to the amount of 155 tons, valued at 6,022 dols., against 331 tons, valued at 15,001 dols., in March, 1897. The nine months' total shows 2,316 tons, valued at 98,225 dols., as compared with 4,198 tons valued at 166,191 dols.

CANADIAN shippers of pulp still speak well of the British demand, but complain that freight rates are extraordinarily high, and that space is scarce owing to the heavy shipments of wheat and other food stuffs to catch the high prices that the war has caused.

AS a result of the opening-up of direct steamship communication between Manchester and Canada, and in anticipation of more favourable conditions for trade under the new tariff, a number of importing and exporting houses in Manchester and its neighbourhood are, we learn, making arrangements to begin or develop business with the Dominion. A similar desire to take advantage of the new opportunities is being manifested by Canadian traders, and, with the object of furthering the movement, the European Exporters' Association of Toronto has just sent Mr. Edward Still, its managing director, to England. Mr. Still is at present in Manchester, where, in co-operation with the Ship Canal Company, he is endeavouring to bring shippers and importers into touch with Canadian markets and sources of supply.

IT is stated that the East River Saw Mill at Sheet Harbour, N. S., is to be replaced by a pulp mill with four grinders.

A MEETING of the Nova Scotia Wood Pulp and Paper Company was recently held at Halifax, N. S., to consider the best method of paying off the present debts of the company.

SIR WILLIAM VAN HORNE, president of the Canadian Pacific Railroad, and Mr. R. B. Angust, a director, have the arrangements in hand for the floating of the Laurentide Pulp Company's bonds in London. Mr. Alger, Secretary of War in President McKinley's Cabinet, is deeply interested in the company, and the present financial operation will represent a sum exceeding a million dollars. It is thought in financial circles in Montreal that the C. P. R. magnates in question will have little difficulty in floating the big company's bonds.

MR. ROBERT G. REID, who recently obtained important concessions from the Government of Newfoundland, has under contemplation the building of a gigantic wood pulp mill. The proposed schemes also embraces the erection of paper mills.

ONE of the first shipments of pulp from Harvey's pulp mill at Black River, Newfoundland, has recently been made. The pulp was put up in bundles weighing about 200 lbs. each, and is reported to be of good quality.

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WORLD'S PAPER TRADE REVIEW
Office: 58, Shoe Lane, E.C.

TRADE NOTES.

NEW SCOTTISH LIMITED COMPANIES.—Our Scottish representative is informed that the firm of Messrs. William Tod and Son, Springfield Paper Mills, Midlothian, will shortly be formed into a limited company. The 5 per cent. £5 pref. shares of Messrs. J. Brown and Son, Esk Mills, already stand at from 36s. prem.

THE SUN PAPER MILL CO., LTD., have, writes a correspondent, withdrawn from the proposed combine of British "news" mills.

THE Darwen Paper Mill Co., Ltd., at a meeting on Saturday last, decided not to sell their three paper mills for the purpose of joining the proposed combination of "news" paper manufacturers.

THE STAR PAPER MILL CO., LTD., AND THE PROPOSED "COMBINE."—A general meeting of the Star Paper Mill Company, Ltd., was held on Tuesday afternoon at the Grosvenor Hotel, Manchester. The ordinary half-yearly business having been disposed of, the question of a combination of paper mills, which has been pending for some months, was then discussed, and after due consideration the meeting decided not to proceed with the matter.

THE STATE OF TRADE.—According to the labour correspondent of the Board of Trade, employment in the paper trade is fair, the percentage of unemployed union members at the end of May being 3·2, compared with 2·8 in April. The percentage for May, 1897, was 3·3.

PRESENTATION TO MR. D. M. WATSON.—At a social meeting of the employees of Messrs. Brown, Stewart and Co., Limited, Dalmarnock Paper Mills, held in the Albert Hall, Main-street, Bridgeton, Glasgow, on Saturday, 18th inst., a presentation was made to Mr. D. M. Watson, on the occasion of his retiral.—The Chairman referred to Mr. Watson's 33 years connection with Brown, Stewart and Company, and spoke of the untiring energy and attention which he had displayed in the interests of the company during that period. He also alluded to the general esteem in which Mr. Watson was held by his compeers in the paper trade.—Mr. Joseph Buchanan, one of the oldest employees, then made the presentation, which consisted of a handsome gold albert and appendage with the following inscription:—"Presented to Mr. D. M. Watson, Manager, by the employees of Dalmarnock Paper Mills, as a token of their respect and esteem, on the occasion of his retiral." Mrs. Watson was the recipient of a gold ring.—Mr. Watson, on behalf of himself and Mrs. Watson, in accepting the gifts, thanked the donors for their presents, and said they would always remind him of his long connection with Dalmarnock, where he had at all times endeavoured to the best of his ability to do his duty towards both the masters and the workpeople. At the close of the concert the audience joined in singing "Auld Lang Syne," when the meeting terminated.

MESSRS. GUILD, RICHARDSON AND CO. advise us that they have purchased Hopefield Paper Mills at Blackburn, Bathgate, N.B., lately occupied by the Almond Leather Board Company.

WILLIAM MACKEAN, LTD.—This company has been registered with a nominal capital of £100,000 in £10 shares. Object, to acquire the business of the firms of William MacKean, starch manufacturer and dealer in cereals, Paisley, and Paisley Sugar Company.

THE INTERNATIONAL FIBRE CHAMOIS CO., LTD.—In connection with the affairs of this company the examination of Mr. J. C. McLauchlin and Mr. I. Y. Johnston is fixed for the 29th inst., at the Bankruptcy-buildings, Carey-street, Lincoln's-inn, W.C.

A RECEIVING order in bankruptcy was made on the 14th inst., (on the debtor's own petition) against Jacob French, trading as J. French and Co., rag merchant, 36, Earl-street, Finsbury, London, E.C. A first meeting of creditors in this case will be held on the 28th inst., at 11 a.m., the public examination being fixed or July 14th, at the same hour, both at Bankruptcy Buildings, Carey-street, W.C. The debtor was also adjudicated bankrupt on the same date.

PAPERMAKERS AND THEIR EFFLUENT.—At the last meeting of the Ribble Joint Committee, the chief inspector (Mr. Naylor) reported that no reply had been received from Messrs. Peebles and Co., papermakers, Church, to the complaint which the clerk was instructed to make at the last meeting. It was decided to ask the company to send a deputation to the next meeting. Messrs. Potter and Co., Belgrave Paper Mill, Darwen, were asked to send representatives to the next meeting to explain a fresh source of pollution of the River Darwen by the drainage from the solid waste tip from this mill.

ACETYLENE.—An exhibition is being held at the Imperial Institute of acetylene generators and illuminators. A score or so of enterprising firms who have taken up the invention display the result of their own particular method of adapting it as an illuminant for all purposes, from a street standard to a bicycle lamp; and in one or two instances something has been done in the way of providing special burners for cooking. The light is beautifully white, colours remaining absolutely unaffected by it—a point which has to be considered in many branches of work, particularly in matching samples, etc., by papermakers. It may be said, in brief, to be a product of an electrical furnace in which powdered lime and carbon are fused together. The resultant carbide of calcium, brought into contact with water, produces the particular gas the knowledge and use of which it is the object of the present exhibition to bring about.

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COOKE AND NUTTALL, LTD.—Registered with a nominal capital of £20,000 in £5 shares. Object, to acquire and carry on the business of a papermaker carried on by Leonard Cooke at the Vale Paper Works, Horwich, Lancashire. The first directors—to number not less than two nor more than four—are Horace B. Cooke and Timothy Y. Nuttall. Qualification, £500. Remuneration as the company may decide. Registered office: Vale Paper Mills, Horwich, Lancashire.

TURNER PAPER MILL CO., LTD.—Registered with a nominal capital of £80,000, divided into 5,000 six per cent. cumulative preference, 4,040 ordinary, and 6,950 deferred shares of £5 each. Object, to manufacture or in any way manipulate, and to buy, sell, and deal in wood pulp, chemical wood pulp, paper pulp, half stuff, and all other kinds of pulp and papermaking materials, to carry on the business of paper and paper pulp manufacturers, and dealers in the manufactures, chemical bye-products and residues of other persons, firms, or companies, necessary for any process of manufacture of wood-pulp, or any other kind of pulp or paper and to carry on any other business, manufacturing or otherwise, which may be conveniently carried on in connection with the same, or calculated, directly or indirectly, to enhance the value of or render profitable any of the company's property or rights. The subscribers are:—J. W. Lees, Greengate Brewery, Middleton Junction, near Oldham, 1 share; J. Newsome, 52, Major-street, Manchester, 1; E. Newsome, 52, Major-street, Manchester, 1; A. Newsome, 52, Major-street, Manchester, 1; W. G. Groves, Windermere, 1; E. Holt, Woodthorpe, Prestwich, 1; J. Turner, Paper Mill, Rawcliffe Bridge, Yorkshire, 1. The first directors—to number not less than three nor more than five—are John W. Lees, John Newsome, William G. Groves, and Edward Holt. Qualification, £2,000. Remuneration as the company may decide.

NEW AUSTRIAN PATENT LAW.—Messrs. W. P. Thompson and Co., of Manchester, write:—"The new Patent Law in Austria, we are now advised, comes into force on the 7th January, 1899. This new law seems to be based on the German law, and is substantially the same. It constitutes a board of examiners at the Patent Office, who have power to grant or refuse patents, as they may consider them novel or otherwise. Patents are to be granted for 15 years for new inventions capable of being used industrially, but not for articles of food, medicines, disinfectants, or substances produced by chemical processes where no new technical process is introduced. On the other hand, if the patent be granted for a process, the effect of the patent also extends to the products directly produced by such process. Further, patents will not be granted for anything which has been described in a printed publication, or has been publicly exhibited, or has been patented in any other country. The war authorities have the right to appropriate and use for their own requirements inventions relating to arms, explosives, ammunition, fortifications, ships, etc., such compensation being paid as is deemed reasonable. The Patent Office has power to grant licenses compulsorily where the patentee refuses to do so, and such or any license is transferable by the licensee in connection with the business to which it belongs. The Patent Office has power to annul patents and to decide questions of validity. As a court of appeal against the decisions of the Patent Office, a Patent Court is to be instituted in Vienna. Opposition may be entered by any interested person to the granting of the patents within two months of the publication thereof. The renewal fees amount to nearly £200, payable annually, commencing at about £3 the first year, and increasing to £35 for the fifteenth year. There will be no compulsory working of the patent under the new law."

THE offices of the English Fibre Industries, Limited, are now at 19, Eastcheap, E.C.

THE SCOTTISH ALUM CO., LTD., advise us that they have removed from 1, Dundas-street, to 153, Queen-street, Glasgow.

FROM the firm of Messrs. James T. Hibbert and Co., rag merchants, Sutton-street Works, New Islington, Manchester, Mr. J. T. Hibbert has seceded.

IT was reported at the annual meeting, held on Monday, in Glasgow, of Young's Paraffin and Mineral Oil Company, that there was again no dividend, as the debit balance was £3,404. The Chairman said there was a fall in prices last year of nearly £22,000. The year 1891 showed profits of £74,000. The drop in the selling prices of last year's products as compared with 1891 was £157,000. Last year's prices were the lowest on record.

THE Royal Commission for the Paris Exhibition of 1900 are now prepared to circulate information respecting the exhibition. The classification and rules for exhibitors, together with forms of application for space, can be obtained by applying to the secretary of the Royal Commission, Paris Exhibition, 1900, St. Stephen's-house, Westminster, S.W.

UNDER the will of the late Mr. James Bromley, paper merchant, Bolton, £1,000 has been left to St. George's-road Congregational Church in that town. £500 towards building a new Congregational church, and £100 to the local infirmary.

ACCORDING to a recent statement on the development of Northern Asiatic Russia, there is a good market for papermaking machinery in that country. So far, however, requirements in this direction are not extensive, there being but three mills (manufacturing writings) in Siberian territory at present.

PRICES OF CHEMICALS.—Advices from New York state that English Bleach is quoted as selling at 1·75 to 1·80 dols.; French Bleach, 1·62½ dols.; German Bleach, 1·62½ dols.; Foreign Alkali, in casks, 75c.; American Alkali, 65 to 70c.; U. A. C. Caustic Soda, 1·80½ dols.; with the American article at 1·75 dols.

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The World's Paper Trade Review
A WEEKLY JOURNAL FOR PAPER MAKERS & ENGINEERS.

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MR. RICHARD KERSHAW,
BOX 198, ROYAL EXCHANGE, MANCHESTER.

FRIDAY, JUNE 24, 1898.

The Proposed Combination of British "News" Mills.

THE amalgamation scheme has been well discussed this week, but the action taken by the shareholders of several of the mills interested is against rather than for the project, a result that must be very disappointing to Mr. R. W. Perks, M.P., of Thomas Owen and Co., Ltd., and Mr. A. L. Poulter, of the London Paper Mills Co., Ltd., who have worked hard to bring the matter to a successful issue. Some months have now elapsed since the idea of combination was brought before the following mills;—

THOMAS OWEN & CO.
LONDON PAPER MILLS CO.
DARWEN CO.
STAR CO.
SUN CO.
CHADWICK & TAYLOR.
DIXON & CO.
NORTH OF IRELAND CO.

The various proposals at the outset were received with favour, the mills, without exception, recognising the keenness of foreign competition, and the desirability of some understanding amongst home manufacturers. Negotiations, however, have shown that it is a difficult matter to give satisfaction to all parties concerned. It is reported that several directors, with small holdings, have refused to support the proposed "combine," on the ground, it is believed, that their services would not, in all probability, be required, and they would consequently lose their fees. In Lancashire paper trade circles the opinion has been widely expressed that the movement will speedily collapse, as the Sun Paper Mill Co. had withdrawn from the proposed "combine," the Darwen Paper Mill Co., at a meeting on Saturday last, also decided not to join, and further, on Tuesday, at the general meeting of the Star Paper Mill Co., it was decided by the shareholders not to take any further part in the proposed combination. Three large and important mills have therefore seceded from the scheme, and without them no combination can be complete. On Monday the shareholders of the London Paper Mills Co. held a meeting, and unanimously supported the proposals for an amalgamation of British "news" mills, but with the present lack of unanimity amongst the mills concerned there is very little chance of success.

* * *

The Export Trade in British Paper.

ON another page we publish a full list of the countries importing British paper, the statistics relating to the quantities and values for the year 1897. The total exports of writings, printings, and envelopes amounted to 685,734 cwts., of the value of £1,016,638, which included 172,715 cwts., of the value of £313,039, shipped to foreign countries, and 513,019 cwts., of the value of £703,599, to British possessions. Paperhangings were exported to the extent of 73,939 cwts., of the value of £174,744, representing 21,806 cwts., of the value of £67,231, dispatched to foreign countries, and 52,133 cwts., of the value of £107,513, to British possessions. Pasteboards, millboards, cardboard, playing cards were exported to foreign countries to the amount of 3,739 cwts., of the value of £8,072, and to British possessions to the quantity of 28,692 cwts., of the value of £44,067, making a total of 32,431 cwts., of the value of £52,139. Paper of the unenumerated class and articles of paper (except papier maché) were exported to the extent of 209,723 cwts., valued at £280,959, representing 59,047 cwts., of the value of £140,427, shipped to foreign countries, and 150,676 cwts., of the value of £140,531, to British possessions. The above items give a total export of all classes of paper of 1,001,827 cwts., of the value of £1,524,479. The bulk of the trade is with the colonies, 74½ per cent. in regard to quantity, and a good 65 per cent. in the matter of value. Shipments to foreign countries represent about 25½ per cent. of the total quantity, and nearly 35 per cent. of the total value.

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S. O. Contracts.

THE present method of placing contracts for the supply of paper to H. M. Stationery Office is certainly a great improvement on the system that previously prevailed which allowed Tom, Dick, or Harry to tender and to introduce, if to their advantage, the product of foreign mills. According to the present stipulations the person tendering must be a bona-fide manufacturer with mills in the United Kingdom, and according to Mr. Hanbury, in answering a question put by Sir C. E. H. Vincent in the House of Commons, "a very large saving in cost had been effected." Mr. Hanbury stated that all the papers known as stock papers, which were about two-thirds or three-fourths of the whole, for the use of Parliament, the Government offices, and the public service, were now purchased "direct" from the manufacturers, and all supplies had to be accompanied by a certificate that they had been manufactured on the premises of the contractor. The result was that only papers of British or Irish manufacture were obtained. The papers not so obtained were chiefly those which had to undergo some special process, and so could not be obtained direct from the original manufacturer. Surely British papermakers, with a little effort, could reduce the quantity, amounting to one-quarter or one-third of the total, now placed with outsiders.

Stocks and Shares.

To-day (Wednesday) there has been a most pronounced decline in Star Paper shares of 1½, and of ⅝ in North of Ireland Paper, consequent on the failure of the proposed "paper combination" in this country. As reported in the press, Darwen Paper Co. rejected the proposal to join on Saturday last, and Star yesterday followed suit at their meeting. Others are fractionally lower in sympathy, and East Lancashire bonus are ⅛ easier. Ramsbottom, on the other hand, seem stronger at a rise in the pref. of ⅛, whilst the ord. remain firm buyers. Kellners part paid are $\frac{1}{16}$ better.

Among chemical shares, nothing startling has taken place, though Brunner, Monds have recovered somewhat their recent fall. The ord. are ¼ better, and the pref. ⅜, whilst the new ord. are down ½. Castner-Kellners, after being buyers at 25s., have had a fall, and leave off unchanged on the week. United Alkali debs. are better by ¼ per cent., and the others remain very steady.

Report received from Mr. F. D. DEAN, 36, Corporation Street, Manchester.

Telegrams: "Fredean—Manchester." Telephone No. 2180

PAPER, &c.

Amnt Paid.	Nominal Am't	Name of Company.	Last dividend per cent.	Prices June 22nd
10	10	Bath Paper Mill Co. (Ld.)	5	11½—12
100	100	Bergvik Co., Ltd., 4½% debs.	4½	104—106
10	10	do. do. 6% pref.	6	12½—13
3⅛	5	Burnley Paper Co. (Ld.)	10	5⅞—6⅛
7	7	Bury Paper, ord. ,,	6	6⅛—6⅜
7	7	do. 6% pref. ,,	6	7⅛—7⅜
2½	3	Collin (Darwen) Paper ,,	nil	⅛—⅜
5	5	Darwen Paper Mill Co. "A"	15	11½—12
3⅛	5	do. do. "B"	15	9—9½
10	10	E. Lancashire Paper Co. Ld.	nil	8¼—8½
10	10	do. do. 6% pref.	nil	8¼—8½
5	5	do. do. bonus	nil	3⅛—4
100	100	Ekman Pulp & Paper Co. Ld. debs.	4½	95—97
4	5	Hartlepool Pulp & Paper,,	10	6¾—7¼
5	5	Hyde Paper Works Co. ,,	nil	1⅛—2
2½	5	Kelln'r-Part'g't'n P'p Co,,	12*	7⅛—8
5	5	do. do.	12*	14—14½
100	100	do. do. debs.	4½	106—108
4	5	N. of Ireland Paper Co. ,,	12½	7⅞—8⅛
7	10	Olive Brothers ,,	10	7—7½
1	1	Owen, T. & Co. 6% pref	6	26/6—27/6
1	1	do. do. ord.	12½	2⅛—2⅜
100	100	do. do. debs.	5	112½—113½
5	5	Peebles (A. M.) & Son ,,	8½	7⅞—8
5	5	do. 5% cum. pref.	5	6¼—6½
100	Stock	do. 4½% deb. issued 1905	4½	112—115
3	5	Ramsbottom Paper Co. ,,	12½	7¼—7½
1	1	do. do. cum. pref.	5	1⅛—1⅛
4½	5	Roach Bridge Paper Co. ,,	10	5⅝—5⅞
5	5	Star Paper Co.	10	6¾—7 x.d.
3	5	do. do. cum. pref.	10	6—6¼ x.d.
10	10	Waterlow & Sons non.-cum. def.	—	13¾—14¼
		do. do. non.-cum. pref.	4	13¾—14¼
10	10	do. do. cum. pref.	3½	10½—11

CHEMICALS, &c.

8	10	Bowman, Thompson & Co., (Ld.)	7½	6⅝—6⅞
10	10	do. do. cum. pref.	7	10¼—10⅜
100	100	do. do. debs. (red. 1904)	6	104—106
10	10	Brunner, Mond & Co. (Ld.)	20	37⅞—38
3½	10	do. do. "New" ,,	20	14—14⅛
10	10	do. do. 7% pref. ,,	7	18—18⅛
5	10	do. do. do. new issue	7	8 5/16—8 7/16
1	1	Castner-Kellner Alkali Co.	—	24/—25/-
5	5	Clayton Aniline cum. pref.	6	5 15/16—6
	10	Steiner (F.) and Co., Ltd., cum. pref.	5	11⅜—11⅝
	Stock	do. do. deb. stock (red. 1912).	4	105—107
10	10	United Alkali Co. ,,	2	1 3/16—1 5/16
10	10	do. do. cum. pref.,,	7	8 3/16—8 5/16
100	Stock	do. mort. deb. (red. after 1901)	5	110½—110¾

* Interim.

THE war in which Spain is now embarked with the U.S.A. leads her to raise money by hook or by crook. The commission on the Budget proposes to establish a tax of 2 pesetas (about 1s. 7d. nominally) on each ton of esparto grass or other raw fibre exported from the country.

THE authorities of the National Printing Office at Paris have at length decided to permit wholesale stationers, as well as papermakers, to tender for the paper supplies for that institution. The dispute which had arisen on this point was referred to in one of our previous issues.

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Re Bichromate of Potash as a Paper Waterproofing Material.

To the Editor of the WORLD'S PAPER TRADE REVIEW

SIR,—The experience of your correspondent who had holes eaten in his fingers when using potassic bichromate loses value because he does not give details of the manipulative process employed.

If sheets of paper be dipped into a solution of gelatine, and then into one of bichromate of potash (the tint of which solution need not be deeper than a straw yellow), and then hung up in full daylight to dry, the physico-chemical effects of the light will cause the bichromate to so act on the gelatine that it renders the sheet of paper impermeable to water. Surely in this simple manipulation there should be no serious results happen to the operator. If your correspondent will explain the process he follows, I may be able to suggest a remedy.

Many caustic fluids will eat away the flesh. I have had my finger tips almost bare to the bone through manipulating with solid caustic soda, and have had holes eaten into the palm of the hand through the corrosive action of nitric acid.

Yours truly,
H. C. STANDAGE.

—o—

A Pernicious Custom.

To the Editor of the WORLD'S PAPER TRADE REVIEW.

SIR,—We have watched with interest the last two issues of your valuable paper, and are of opinion that your first correspondent has at some time used his lubricator of palm oil freely. Probably he has sent inferior stuff into the mill to make up, so that in the long run he would not be the loser. Perhaps, owing to inferior stuff, he has not come off so well for orders, and as he dropped his tips he now wakes up, and in anger begins to expose the poor papermakers saying "Put it down," thinking then, perhaps, he will get a fair share of the trade.

If he didn't care to fetch out his mite, why did he begin it; he would not have been bothered with any more applications from the same applicant. I think this must have been the first year he has had anyone to apply to him at all, as there is a mill in Dartford (a prominent news mill) where there are 16 practical papermakers who have worked in different parts of the world, viz., all over England, Scotland, Ireland, Wales, India, United States of America, and Holland, and not one has worked in a mill where there has been any palm oil for wood pulp.

If he is so anxious to put it down why don't he publish the names of the mills that have applied to him, and not leave every employer to wonder which of his employees have had the money and kept it.

We think he must be like your second correspondent, W. J. F. He talks of teaching the meanest employees to hold up their heads in manly independence; surely he must still have his lubricator full and head bending low, or he would already hold up his head with an independent air and sign his name, so that he could say I do business honestly and am independent of all paper manufacturers' employees.

Your correspondents must have forgotten when they tip without being troubled with these applications, and try to make workmen as big a rogues as themselves. Its an old saying but a true one, "Put a thief to catch a thief."

We will enlighten you on our so-called annual excursion. This year the mill will shut on the Friday at 6 p.m. and start again the following Monday 6 a.m. One set of shift workers will lose 12 hours and a week's tonnage, and the other shift workers will lose 24 hours and a week's tonnage. The firm gives £20 to be divided amongst 200 people. It reduces the fares a little, each paying 3s. We can all go and enjoy ourselves with the satisfaction of knowing that we all pay, and on pay day have about half a week's pay to come.

Is this experiencing a pauper's pleasure? Hoping we have not taken up too much space in your valuable paper,

We remain, Dear Sir,
PAPERMAKERS.

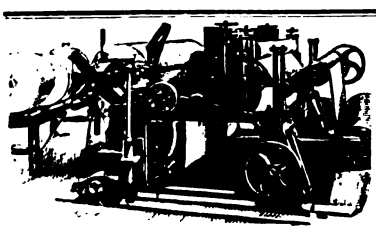
Kent, June 21st, 1898.

DETERGENT
For Steam Boilers and for Softening Water.

Hyposulphite of Soda, Sulphite of Soda,
Borax, Glauber Salts,
Epsom Salts, Alum.

Precipitated Chalk, Salts of Tartar,
PEARL ASHES. 309.

E. BRAMWELL & SONS,
ST. HELENS, LANCASHIRE.


PATENT SLITTING & WINDING MACHINE FOR WEBS

PAPERMAKING MACHINERY.

JAMES MILNE & SON, LTD.
MILTON HOUSE WORKS EDINBURGH.

SPECIAL PREPAID ADVERTISEMENTS

IT IS IMPORTANT that Advertisements under any of the Headings mentioned below should reach us by the first post on Wednesday to insure insertion.

SITUATIONS WANTED—Charges for advertisements under this heading are One Shilling for twenty-four words, and One Penny per word after. Minimum charge One Shilling. Names and addresses to be paid for.

SITUATIONS VACANT, BUSINESSES WANTED or FOR DISPOSAL, MILLS WANTED or TO LET, MACHINERY, and MISCELLANEOUS—Charges for Advertisements of the above class are Three Shillings for fifty words or under; One Shilling extra for every line or portion after. Ten words to be reckoned for each line. Names and addresses to be paid for.

LEGAL and FINANCIAL ANNOUNCEMENTS, TENDERS, SALES BY AUCTION, Etc.—One Shilling per line.

PAYMENT must be made in advance, except where the advertiser has a running account, in which case the cost can be debited thereto.

ADVERTISERS by paying an extra fee of Sixpence can have the replies addressed to the *World's Paper Trade Review* office under a number, and such replies will then be forwarded post free.

SUBSCRIPTION £1 per Annum, Post Free to all Countries

OFFICES—58, SHOE LANE, LONDON, E.C

Situations Vacant.

WANTED, MACHINEMAN for good News Mill; must be steady, sober, and industrious, and be able to pay attention to his work. State wages and experience; good testimonials necessary.—Address, No. 7305, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7305

WANTED, FOREMAN, well up in M. G. Caps; also state whether used to Fourdrinier Papers.—Address, stating experience and wages required, to X. Y. Z., No. 7,313, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7313

WANTED, a MACHINEMAN, must be steady, sober and energetic man; young married man preferred. Close two o'clock Saturdays.—Address, with references, age, and where last employed, to W. P., No. 7,318, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7318

WANTED, a MILLWRIGHT, one accustomed to paper mill work preferred. Constant employment to good and steady man.—Apply, enclosing copies of testimonials and stating wages required, to the Hartlepools Pulp and Paper Co., Limited, West Hartlepool. 7317

WANTED, a Machineman and Two Beatermen, used to making writing papers; must be steady and capable. State full particulars.—Apply, Nash, Cray Valley Mills, St. Paul's Cray, Kent. 7316

WANTED, Smart MECHANIC to erect new papermaking machine.—Marsden and Sons, Dearne Paper Works, Barnsley. 7314

Situations Wanted.

A BEATERMAN wants Situation as Beaterman or Working Foreman; used to Ropes and M.G. Browns, and all kinds shop papers; first class references from last place.—Wm. Rabjohns, Ethel House, Sheene-road, Bedminster, Bristol. 7301

A MACHINEMAN of 16 years' experience in M.G. news and printing papers, seeks employment as Night or Under Foreman; high-class character; married.—Address, No. 7,315, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7315

FINISHER desires re-engagement; experienced in all classes of paper.—Address, No. 7,322, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7322

MANAGER wants Re-engagement; practical papermaker, any class; active and energetic; good references.—Address, No. 7,287, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, E.C. 7287

MACHINEMAN seeks Situation, 13 years' experience in mills making E.S. Writings and Printings. Good references as to character and ability. Address, No. 7,296, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7296

MANAGER, experienced; thoroughly and practically conversant with all the details of the manufacture of Fine Printings, E.S. Writings, Tinted, and Litho Papers, etc. Practical knowledge of applied chemistry; good commercial experience, and accustomed to analytical cost sheets. Open to engagement, with full charge, or to assist principal.—Address, No. 7,226, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7226

MANAGER now open to Re-engagement; 15 years' experience as such in first class mills. Good papermaker, with thorough knowlege of rags, esparto, and wood pulps; experience of limited companies, and used to entire control. Active and energetic; age 42; good references.—Address, No. 7,278, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7278

PRACTICAL PAPERMAKER and experienced Wood Fulp Buyer, open for engagement as Buyer and Manager for paper mill.—Address, No. 7,311, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7311

WANTED, Re-engagement as Manager or Foreman, in mill making tub-sized writing papers; used to all qualities and modern methods of manufacture. Age 44; active and energetic; good references as to character and ability from first-class mills.—Address, No. 7,271, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7271

Machinery.

PAPERMAKING MACHINE Wanted, over 72-in. wide; must be in good condition and strong for fast running.—Address, No. 7,289, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7289

WANTED, good second-hand Revolving Cutter, 72 inches to 80 inches wide; must be in good condition. State particulars and where to be seen.—

Miscellaneous.

A LONDON FIRM of Paper Agents representing high-class writing and blotting mills, and having long experience in news, printings, lithos, coated papers, colours, M.G. papers, etc., is open to represent other mills.—Address, No. 7,321, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7321

BRITISH AGENCY Wanted in France for Fine Writings by an old-established, substantial papermaking and wholesale firm of Bordeaux.—Address, No. 7,306, Office of the WORLD'S PAPER TRADE REVIEW, 58, Shoe-lane, London, E.C. 7306

FACTORY SITES.—For Sale, Capital Sites, with extensive river frontage; convenient to the depots of five different lines of railway.—Apply, F. H. Cooke, Land Agent, Peterborough. 7300

JOHN FULTON & CO., Engravers of Rollers for Printing Wall Papers, etc., and also Rollers for Embossing all kinds of Papers.—Knowsley-street Engraving Works, Manchester. 7215

PAPER MILL FOR SALE.—Brown Paper Mill in Scotland, 64 inch machine, steam and water power.—Particulars on application to No. 139, Keith & Co., Advertising Agents, Edinburgh. 7319

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Office of the WORLD'S PAPER TRADE REVIEW,
Telegrams: "STOXHILL—LONDON." *58, Shoe Lane, London, E.C.*

MARKET REPORT.

IMPORTS AND EXPORTS OF

All Classes of Paper Stock

at the Ports of

LONDON	BARROW	HARWICH	GRANTON
LIVERPOOL	GOOLE	DOVER	GRANGEMOUTH
MANCHESTER	GRIMSBY	POLKESTONE	DUNDEE
RUNCORN	BRISTOL	GLASGOW	BONESS
FLEETWOOD	HULL	GREENOCK	Etc., Etc.
PRESTON	SOUTHAMPTON	LEITH	

For the Week ending Tuesday last.

FROM SPECIAL SOURCES AND TELEGRAMS.

CHEMICALS. — The market continues dull and quotations for some articles show a downward tendency. AMMONIA ALKALI stands at £4 2s. 6d. to £4 5s. 6d. on rails, and SODA ASH 48 per cent. Caustic and Carbonated £4 to £4 15s. on rails. CAUSTIC SODA 77-78 per cent. is quoted £8 2s. 6d. to £8 12s. 6d., and CAUSTIC BOTTOMS £5 5s. to £5 15s. BLEACHING POWDER is offered at £5 2s. 6d. to £5 7s. 6d. soft wood, casks. SODA CRYSTALS stand at £2 5s. in bags on rails. ALUM is quoted £4 17s. 6d. to £5 for loose lump, £5 2s. 6d. ground in tierces, and £5 10s. ground in bags on rails Manchester, and SULPHATE OF ALUMINA £4 5s. to £4 10s. per ton according to quality. SULPHUR is firm at £4 15s. to £5.

Quotations are nominally as follows:—

Alkali, Ammonia, 58%	...	f.o.b. Liverpool		£4	5 0
,, ,, 48%	...	,, ,,		4	0 0
Alum (Ground), tierces	...	,, ,,	2½%	5	5 0
,, barrels	...	,, ,,	2½%	5	15 0
,, tierces	...	,, Hull	2½%	5	2 6
,, ,,	...	f.o.b. Glasgow	2½%	5	5 0
,, (Lump) ,,	...	f.o.b. Liverpool	2½%	4	12 6
,, barrels	...	,, ,,	2½%	4	15 0
,, tierces	...	,, Hull	2½%	4	12 6
,, ,,	...	London	2½%	5	2 6
,, ,,	...	f.a.s. Glasgow	2½%	4	12 6
Alumina Sulphate	...	f.o.b. Tyne	net	3	11 3
Aluminoferric Cake, slabs	...	Liverpool		2	15 0
,, ,, tierces		,,		3	2 6
Alumina Cake, slabs	...	Glasgow		2	10 0
Blanc Fixe	...	f.o.b. Tyne	net	6	12 6
Bleach	...	,, ,,	net	6	0 0
,, (soft wood)	...	f.o.r. Lancs.	net	5	5 0
,, (hard wood)	...	f.o.b. Liverpool	net	6	0 0
,, (soft wood)	...	landed London	net	6	5 0
Borax (crystals)	...	... ...	net	14	0 0
,, (powdered)	...	... ...	net	14	10 0
Chloride of Barium	...	f.o.b. Tyne	net	6	15 0
Caustic White, 76%	...	,, Liverpool	net	8	7 6
,, ,, 74%	...	,, ,,	net	8	2 6
,, ,, 70%	...	,, ,,	net	7	10 0
,, ,, 70%	...	f.o.r. Lancs.	net	7	7 6
,, ,, 60%	...	f.o.b. Liverpool	net	6	10 0
,, Cream, 60%	...	f.o.r. Lancs.	net	5	15 0
,, ,, 60%	...	f.o.b. Liverpool	net	5	17 6
,, Bottoms, 60—62%	...	f.o.r. Lancs.	net	4	12 6
Soda Ash, Carbonated, 58%	...	f.o.b. Liverpool	net	4	15 0
,, ,, 48%	...	,, ,,	net	4	12 6
,, ,, 58%	...	f.o.r. Widnes	net	4	10 0
,, ,, 48%	...	,, ,,	net	4	5 0
,, Caustic, 48%	...	f.o.b. Liverpool		4	12 6
,, ,, 57-58%	...	,, ,,		4	17 6
Hypo-Sulphite of Soda (10 ton lots)	...	f.o.r. Tyne		4	15 0
,,		ex ship Liverp'l	net	5	0 0
Oxalic Acid	...	f.o.b. Liverp'l	3½%	per lb.	3
Salt Cake	...	on rail, in bulk		1	0 0
Sal Ammonia (1sts)	...	f.o.b. Liverpool		35	0 0
,, (2nds)	...	,, ,,		33	0 0
Soda Crystals	...	,, Tyne	net	2	17 6
,,	...	ex ship Thames	2½%	2	17 6
,,	...	f.o.b. Liverpool	5%	3	0 0
Sulphur, rolls	...	f.a.s. works	2½%	6	5 0
,, flowers	...	,, ,,	2½%	7	5 0
,, recovered	...	,, ,,	2½%	5	0 0
Sulphate of Ammonia	...	,, ,,	2½%	9	10 0
,, Copper	...	,, Liverpool	5%	16	5 0

FOREIGN.—*F.o.b. Continental Ports:*

Hypo-Sulphite of Soda, 10-ton lots casks	...	4	10 0
Sulphate of Alumina, 7-8 cwt. casks net c.i.f. L'd'n		3	15 0
Blanc Fixe (c.i.f. London)	...	7	0 0
White Sugar of Lead	...	27	0 0
Zinc Oxide	...	19	15 0
Bleaching Powder	...	5	15 0

CHEMICAL WOOD PULPS. — SULPHITE is in fair demand and manufacturers are firm in their quotations. On sales, however, for next year's delivery buyers have succeeded in obtaining reductions. SODA pulps keep steady.

GREAT BRITAIN.

Prices, ex steamer, East Coast, are nominally as follows:—

Sulphite, Unbleached, Common	...	£8 12 6	— 9 0 0
,, Superior	...	9 5 0	— 9 10 0
,, Bleached	... ...	11 10 0	— 15 0 0
Soda, Unbleached, Common	...	8 5 0	— 8 10 0
,, Extra	...	8 15 0	— 9 5 0
,, Bleached	... ...	10 10 0	— 12 0 0

SCANDINAVIA.

Sulphite, Prime, f.o.b.	... ...	Kr. 150 — Kr. 160
Sulphate, f.o.b.	... ...	Kr. 130 — Kr. 140

FRANCE.

C.i.f. Rouen per 100 kilos. (2 cwt.).

Bisulphite, Unbleached, dry, 1st quality		Frs. 22.50— 24
,, Bleached	... ...	32 — 36
Soda and Sulphate, Unbleached, 1st quality	...	21.50 — 22.50
,, ,, Bleached	...	27 — 35

UNITED STATES.

Sulphite, American, Unbleached	...	$1¾ — 2
,, Foreign, Bleached	... ...	3.15 — 3.50
Soda, American, Bleached	... ...	1.90 — 2.10
,, Foreign, ,,	... ...	2.70 — 2.80
,, ,, Unbleached	... ...	2.10 — 2.15

MECHANICAL WOOD PULPS. — Business has been more active during the last week or two, several of the Scandi-

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navian mills accepting lower prices for contracts that have been submitted to them. DRY PINE is quoted £4 2s. 6d. and MOIST at £25s. for delivery over the whole of the present year.

GREAT BRITAIN.

Quotations, ex steamer, East Coast, are nominally as follows:

Aspen, dry		£6	10 0
Pine, dry	£4	2 6—4	10 0
,, moist	2	5 0—2	7 6
Brown, dry		4	15 0
,, moist		2	10 0

FRANCE.

Prices for air-dry pulps c.i.f. Rouen, per 100 kilos. (2 cwt.).

Pine, 50% moisture, ordinary	Frs. 10.50—11
,, ,, fine	11 —12
,, dry, ordinary	11 —11.50
,, ,, fine	11.50—12.50
Aspen ,, fine	16 —17.50
Brown (half-chemical), 50% moisture	10.50—11
,, ,, dry	12 —13

UNITED STATES.

F.o.b. Mill, nearest port (per 2,000 lbs.)... 13 dols.

IMPORTS OF WOOD PULP.

Quantity	From	Importer	Port
640 bales	Fredrikstadt	Christophersen & Co	London
1200 ,,	Skein	J. Sharp	,,
180 ,,	Fredrikstadt		,,
561 ,,	St. John		,,
2075 ,,	,,		,,
86 ,,	Rotterdam		,,
2 33 ,,	Ternuzen		,,
31 ,,	Antwerp		,,
119 brls.	Ghent		,,
112 bales	Gothenburg	R. L. Lundgren	,,
42 ,,	,,	G. F. Green	,,
35 ,,	,,	Spicer and Son	,,
272 ,,	,,	H. Pearsall	,,
640 ,,	,,		,,
242 ,,	Ghent		,,
140 ,,	,,		,,
1 ,,	Bergen		,,
80 ,,	Drammen		,,
280 ,,	,,	Tough and Co	,,
200 ,,	,,	Johnsen & Co	,,
150 ,,	,,	Bott and Co	,,
152 ,,	Rotterdam		Liverpool
16 ,,	Gothenburg		,,
1246 ,,	Sundswall		Manchester
4186 ,,	Sarpsborg		,,
460 ,,	Hambro		,,
40 ,,	Christiania		,,
2560 ,,	Skein		,,
1060 ,,	Drammen		,,
1296 ,,	Gothenburg		,,
152 rolls	Rotterdam		,,
3154 bales	Sarpsborg		,,
10192 ,,	Gefle		,,
1788 ,,	Gothenburg		,,
863 ,,	,,		Granton
740 ,,	Drontheim		Hull
1703 ,,	Christiania		,,
342 ,,	Helsingfors		,,
208 ,,	Boston		,,
108 ,,	Rotterdam		Leith
110 ,,	,,		,,
8 ,,	Christiansand		,,
137 ,,	Gothenberg		Glasgow
1259 ,,	Christiania		Grangemouth
2415 ,,	Skien		Goole

Totals of Wood Pulp from Each Country:

BELGIUM	413 bales	HOLLAND	2929 bales
,,	119 brls.	,,	152 rolls
CANADA	2636 bales	NORWAY	12537 bales
FINLAND	342 ,,	SWEDEN	29968 ,,
GERMANY	400 ,,	U.S.A.	208 ,,

STRAW PULPS.—Moderate enquiry.

Prices, c.i.f. London, Hull, or Leith:

German, dry, No. 1	£14 0 0
,, No. 2	13 0 0

STRAW.—Prices are firm.

Oat, c.i.f. London	£2	0	0	F.o.r. Goole	£1	18	6
Wheat ,,	2	2	6	,,	2	0	0
Rye ,,	2	10	6	,,	2	10	0

ESPARTO.—There has been rather more enquiry and business done in African for very distant shipment at slightly easier prices. Spanish for all positions is in demand, but sellers do not respond and quotations remain nominal. Freights are somewhat lower and more tonnage available.

Prices c.i.f. London and Leith, or f.o.r. Cardiff, Garston, and Tyne Docks, are nominally as follows:

Spanish—Fair to Good	£4	17 6—5	5 0
Fine to Best	5	10 0—5	15 0
Oran— Fair to Good	2	17 6—3	0 0
First Quality	3	5 0—3	7 6
Tripoli— Hand-Picked	3	2 6—3	5 0
Fair Average	2	17 6—3	0 0
Bona and Philippeville	3	5 0—3	17 6

IMPORTS OF ESPARTO.

Quantity	From	Importer	Port
1640 trusses	Oran		Grangemouth
4001 bales	,,		Fleetwood
910 tons	,,		Bo'ness

HOME RAGS.— LONDON: There is a fairly good demand at steady prices.—BRISTOL: Market steady; Seconds show a slight advance.—MANCHESTER: Moderate enquiry.—EDINBURGH and GLASGOW: Trade steady; prices well maintained.—DUBLIN: Market quiet.

LONDON.

N. White Cuttings	18/0-22/0	Canvas No. 1	14/0-15/9
Fines (selected)	19/6-21/0	,, No. 2	9/6-10/0
,, (good London)	17/0-17/6	,, No. 3	5/0
Outshots (selected)	11/0	Mixed Rope	3/0-4/0
,, (ordinary)	9/0	White Rope	3/6-5/0
London Seconds	2/3-2/6	White Manilla Rope	6/6-7/0
Country ,,	4/0-6/6	Coil Rope	9/6
London Thirds	1/3	Bagging	1/3-1/9
Country ,,	2/0	Gunny	2/0-2/3

BRISTOL.

Fines	16/0	Clean Canvas	14/0
Outshots	9/6	Second ,,	9/6-10/6
Seconds	5/6	Light Prints	6/0
Thirds	2/6	Hemp Coil Rope	9/6-10/0
Mixed Bagging	2/6	Tarred Manilla	6/0

MANCHESTER.

Fines	14/0-15/0	Blues	4/3-4/6
Outshots (best)	9/6	Bagging	2/6-3/0
,, (ordinary)	8/6	,, (common)	2/0-2/3
Seconds	4/6-5/0	W. Manilla Rope	7/0-7/6
Thirds	2/0-2/6	Surat Tares	2/6-3/0

EDINBURGH.

Superfines	15/0	W. Manilla Rope	7/0
Outshots	12/0	Tarred Manilla Rope	5/6
Mixed Fines	14/0	,, Hemp Rope	8/0
Common Seconds	7/0	Rope Ends (new)	6/0
First ,,	10/0	,, (old)	4/0
Prints	5/0	Bagging	2/3
Canvas (best)	15/0	,, (clean)	3/0-4/0
,, 2nd	8/0		
Black Cottons	2/6		

GLASGOW.

Fines	12 6-16/0	Canvas No. 1	15/0
Blues	4 6	,, No. 2	10/0
Common Blues	3 3	Manilla Rope	8/0
Bagging	4/0	Tarred Hemp	

DUBLIN.

White Cuttings	16/0	Mill Bagging	2/0
Fines	9/0	White Manilla	6/9
Seconds	3/6	Tarred Hemp	6/0
Light Prints	2.6	Rigging	10/0
Black ,,	1/6		

JUTE.—Prices:

Good White	£15 0 0—16 10 0
Good	13 0 0—14 10 0
Medium	10 0 0—12 10 0
Common	7 0 0— 9 0 0
Rejections	6 10 0— 8 10 0
Cuttings	3 0 0— 4 0 0

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FOREIGN RAGS.—The British demand for French stock is well maintained. German rags are neglected. The imports during the past week were as under:

IMPORTS OF RAGS.

Bales	From	Landed	Bales	From	Landed
251	Copenhagen	Hull	20	Ghent	Goole
64	Harlingen	,,	31	Hamburg	,,
313	Ghent	,,	29	Amsterdam	,,
117	Bordeaux	,,	255	Bourgas	,,
13	Christiania	,,	126	Rotterdam	Grimsby
138	Bremen	,,	61	Antwerp	,,
48	Konigsberg	,,	482	Dieppe	,,
61	Riga	,,	40	Hamburg	,,
199	Hamburg	,,	80	Bremen	Leith
137	Amsterdam	,,	63	Rotterdam	,,
9	Rotterdam	,,	36	Dunkirk	,,
152	Dunkirk	,,	163	Konigsberg	,,
29	Tetuan	London	96	Antwerp	,,
22	Dunkirk	,,	22	Amsterdam	,,
152	St. Brieuc	,,	104	Bremen	Liverpool
207	Leghorn	,,	3	Cette	,,
40	Antwerp	,,	38	Rotterdam	Bristol
20	Amsterdam	,,	134	Amsterdam	,,
199	Rouen	,,	41	Bourgas	,,
273	Ghent	,,	98	St. Nazaire	Newport
7	Gothenburg	,,	54	Le Palais	,,
14	Hamburg	,,	2	Amsterdam	Greenock
65	Alexandria	,,	10	Gibraltar	Glasgow
31	Rotterdam	Goole	67	Ghent	Manchester

Totals from Each Country:

BELGIUM	849 bales	HOLLAND	697 bales
CHANNEL Isles	20 ,,	NORWAY	13 ,,
DENMARK	251 ,,	N. ZEALAND	28 ,,
EGYPT	65 ,,	PRUSSIA	221 ,,
FRANCE	1669 ,,	SPAIN	271 ,,
GERMANY	511 ,,	SWEDEN	7 ,,

BELGIAN.

For Hard Threads [illegible] 8¾ Hail and Twine 22/6 Lempus and Scrim 10¾ Average 12/6 Jammer and Shavings 15¾ Jammer 16/6

White Linens. No. 1	21¾	House Cloths	2¾
,, ,, No. 2	16¾	Oat Bagging [illegible]	3¾
,, ,, No. 3	12¾	,, ,, [illegible]	2¾
Fines Mixed	12¾	Jute	
Grey Linens [illegible]	9¾	White & Cream Linens	25¾
,, [illegible]	14¾	White Cuttings	22¾
Blue Linens	8¾	Unbleached Cuttings	21¾
White Cottons No. 1	16¾	Print Cuttings	8¾
,, No. 2	15¾	Flax & Hemp Waste	
Outsheets No. 3	11¾	Flax Waste [illegible]	
Seconds No. 4	6¾	and Tow	10¾
Prints [illegible]	8¾	Tow	8¾
Fustians [illegible]	4¾	Flax Card Waste	6¾
Fustians [illegible]	5¾	Hemp Waste No. 1	8¾
Bunca Cottons	5¾	,, ,, No. 2	3¾
Hemp Strings [illegible]	2¾		

DUTCH.

For Mail or Twine 24¾ per ton extra. Lumps and Cuts 7¾ Jammer 22¾ Bulkhead

Whites. No. 1	24¾	Mixed Hemp Rope	
,, No. 2	9¾	Cuts	8¾
,, No. 3	6¾	Bolt and Hawser	6¾
Grey Linens	5¾	W. Manilla Rope [illegible]	7¾
Clear House Cloth	5¾	Outsheets	4¾
Mixed Fustians	5¾	Canvas No. 1	24¾
Coloured Prints	2¾	,, No. 2	9¾
Dark Prints	2¾	,, No. 3	6¾
Blue Cottons	5¾	W. Unbleached Rope	9¾
Light Mixed Cottons	7¾	Paper Stock rags	5¾
		Fine [illegible] wool	7¾

GERMAN.

Hessian. Flax.

NWC	23¾	LFX Second [illegible]	7¾
SPFFF	21¾	CSPFFF	24¾
SPFFF and SPFF	17¾	CSPFF	22¾
SPFF	14¾	CFB	6¾
SPF	11¾	Dark Blues [illegible]	11¾
CCC	5¾	White Tares	8¾
CFX	4¾	Jute No. 1	5¾
White Rope	6¾	,, ,, No. 2	
FF Grey Linens	8¾		

[illegible] and Soft. Tow and Jammer.

SPFFF and SPFF	17¾	LFB [illegible]	4¾
SPF	11¾	CSPFFF	22¾
F	8¾	CSPFF	22¾
	8¾	CFB [illegible]	6¾
X	7¾	CFX [illegible]	4¾

FRENCH.

Ex-ship London Liverpool Hull 7/6 extra. Manchester Bristol Leith 10/6 extra.

French Linens. I	21¾	Black Cottons	2¾
,, II	15¾	Blue Linen	7¾
,, III	9¾	New Light Prints	16¾
White Cottons. I	15¾	New White Cuttings	20¾
,, II	8¾	New Grey	15¾
,, III	3¾		
Coloured Cottons	3¾		

PRUSSIAN.

For London Hull or Leith

SPFF	16¾	CC [illegible]	4¾
SPF	12¾	Jute I	3¾
FG	10¾	,, II	2¾
LFB	8¾	Rope I	8¾
FF	5¾	,, II	6¾

NORWEGIAN

For London Hull Tyne and Liverpool.

1st Rope [illegible]	8-9¾	2nd Canvas	7¾
2nd ,, ,,	5¾-6¾	Jute Bagging	
Manilla Rope [illegible]	7¾-8¾	[illegible]	3¾-5¾
Best Canvas	11¾-12¾	Mixed	2¾-3¾

TURKISH.

For Constantinople Smyrna and Salonica.

1st White Cottons	2¾	Best Cloth or Canvas	5¾
2nd ,, ,,	2¾	Rope Thick	6¾
Blue Cottons	2¾	,, Small	4¾
Coloured ,,	2¾		

3¾ at Smyrna and Salonica.

WASTE PAPERS.—There is a steady demand and prices keep firm.

Cream Shavings	22¾	Small Letters	3¾
Fine ,,	8¾	Large ,,	4¾
Mixed ,,	2¾	Brown Paper	2¾
White Printings	7¾	Light Browns	3¾
White Waste	19	Dark ,,	2¾
Wood Pulp Cuttings	3¾	Books & Pamphlets	3¾
Blue Paper	2¾	Strawboard Cuttings	1¾
Crushed News	2¾	Jacquards	2¾

For Liner 2¾ per ton extra.

FLOCKS.—Cotton Flocks, fine quality, £2 10s. per ton at works.

SIZING.—The demand is slightly easier, but prices remain firm as stocks are exhausted and the warm weather prevents makers putting in full work. Raw materials are still scarce and dear.

English Gelatine	—	—	Per cwt.	£4 10	0—6 0 0
Foreign ,,	—	—	,,	3 10	0—5 0 0
Fine Scotch Glues	—	—	,,	2 5	0—3 0 0
Best Leng Scotch Glues	—	—	,,	2 0	0—3 0 0
Common Black ,,	—	—	,,	1 5	0—1 8 0
"Town" Glues	—	—	,,	1 18	0—2 5 0
"Bone" Glues	—	—	,,	1 6	0—1 10 0
Foreign Glues	—	—	,,	1 8	0—1 15 0
Bone Size	—	—	,,	5	6— 10 0
Gelatine Size	—	—	,,	8	6— 10 0
Dry B.A. Pieces	—	—	,,	2 10	0—2 15 0
,, English Pieces	—	—	,,	1 15	0—2 5 0
Wet ,,	—	—	,,	8	6— 9 0
,, Sheep Pieces	—	—	,,	3	0— 4 0
Buffalo Hide Shavings	—	—	,,	1 12	0—2 0 0
,, Packer Waste	—	—	,,	1 12	0—1 15 0

STARCH.—Prices steady. An advance was predicted for Rice Starch, but doubtless the fall in the wheat market will ease the pressure and present prices will continue to rule.

For London, less 2½%:

Maize—	[illegible]	...	£10 0 0
	[illegible]	...	8 10 0
	[illegible]	...	9 0 0
	[illegible]	...	14 0 0
Farina—	[illegible]	...	12 10 0
	E & M F	...	14 10 0

Delivered, less 2½%:

Rice—	Spanish [illegible]	...	19 0 0
	[illegible]	...	18 10 0
	[illegible]	...	17 10 0
Dextrine	...	...	16 0 0

ROSIN.—Fine grades continue low in price. Spot prices are as under:—

B	D	E	F	G	I	K	M	N	WG	WW
49	49½	50	53	56	63	66	7/0	7/6	8/6	9/0

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COLOURS.—Market dull. Quotations are nominally as follows:

Mineral Black	Per Cwt.	£0	3 0
,, (Superior)	,,	0	4 6
Ivory Black (Pure)	,,	0	12 0
Ochre	,,	0	2 3
French (I. C. Ochre)	Per Ton	3	0 0
Chrome (Pure)	Per Cwt.	2	0 0
Red Oxide	,,	0	4 6
Umber (Devonshire)	,,	2	10 0
,, (Turkish)	,,	2	0 0
Lamp Black	,,	0	5 0
Ultramarine (Pure)	,,	1	15 0
Cochineal	Per lb	0	1 3

PASTE COLOURS, with 60% of Colour (less 2½ d.)

Orange Pulp	Per Cwt	2	0 0
Golden Yellow Pulp	,,	1	10 0
Lemon Yellow Pulp	,,	1	10 0
Prussian Yellow	,,	1	16 0
Green (free from Arsenic)	,,	1	16 0
Paste Blue, 20%	,,	0	18 0
,, 33%	,,	1	6 0
,, 45%	,,	2	5 0
Imperial Yellow (dry)	,,	0	16 0

MINERALS.—CHINA CLAY is in steady request, without change in quotations, the best qualities being quoted at from 24s. to 25s. per ton f.o.b. MINERAL WHITE is in fair request, and a steady trade is passing in FRENCH CHALK, SATINITE, SNOWDRIFT, and ASBESTINE PULP.

Mineral White (also known as Terra Alba, Gypsum and Sulphate of Lime), per ton f.o.r. or boat at makers works, less 2½%:—

Superfine	£1	8	0	del. Lancs	£1	18	0
Pottery Superior	1	4	0	,,	1	14	0
Ball Seconds	1	0	0	,,	1	10	0
Seconds	0	15	0	,,	1	5	0
Thirds	0	11	0	,,	1	1	0

(Manchester, 2s. per ton less.)

China Clay, in bulk, f.o.b. Cornwall, 9s. to £1 3s. 6d., bags 4s., and casks 9s. 6d. per ton extra; delivered Lancashire, £1 18s. 0d. to £2 1s. 6d. (for best papers) f.o.r. London, in casks, £2 5s. 0d. per ton, f.o.b. Liverpool, in 5 cwt. casks, £2 2s. 0d. to £2 10s. 0d.

French Chalk, W.E., W.I.N.S.I.R., W.O., and other brands, £2 19s. 0d., £3 4s. 0d., £3 13s. 6d., and £3 17s. 6d. per ton, according to quality, less 2½.

Italian Chalk, finest brands, f.o.b. Manchester or Liverpool I.W.A., "Portland Mills," and "Swan" marks, £4 15s. 0d. to £5 2s. 6d. per ton of 10 bags.

Superfine Hardening, f.o.r. works, £2 0s. 0d. to £2 2s. 0d.

Patent Hardening (2 ton lots), f.o.r. Lancs., £3 5s. 0d.

Snowdrift (Paper Toughener), in ton lots, 12s. 0d. per cwt.

Magnesite (containing 98% Carbonate of Magnesia), raw ground, £5 16s. 6d.; calcined, £10 7s. 6d.

Magnesite (in lumps), £1 19s. 5d. per ton.

Albarine, £3 del. mills.

Asbestine Pulp, £4 0s. 0d. to £4 10s. 0d. per ton c.i.f. London, Manchester, and Glasgow.

Asbestos, brown grades, £14 0s. 0d. to £14 12s. 6d.

Sulphate of Barytes, No. 1, £3 4s. 0d.; No. 2, £2 12s. 0d.; No. 3, £2 2s. 0d.; No. 4, £1 17s. 6d. per ton, according to quality.

Bauxite, minimum alumina, 60%, 16s. 3d. f.o.b.

Pyrites (non-cupreous), f.o.b. shipping ports, 4¾d. per unit.

Satinite, £3 0s. 0d. to £3 5s. 6d., in casks, f.o.b. Liverpool or Manchester.

Whiting, f.o.b., 10s. 6d. to 12s. 3d. per ton.

Sulphate of Alumina, £4 2s. 6d. to £4 15s. 0d. per ton del.

Hydrate of Alumina, £12 10s. 0d.

METALS.—LONDON: COPPER weak; TIN firm; LEAD easy. Tuesday's official closing prices:—

Copper—							
G.M.B., cash	£49	13	9	—49	18	9	
,, three months	49	18	9	—50	3	9	
Tough	52	15	0	—51	10	0	
Best selected	53	0	0	—53	15	0	
Strong Sheet	60	10	0	—			
Tin—							
Fine foreign, cash	69	5	0	—69	15	0	
,, three months	69	12	6	—70	2	6	
Lead—							
Spanish	13	6	3	—13	7	6	
English	13	7	6	—13	10	0	

New Patents.

APPLICATIONS.

12,822 Improvements in or relating to the manufacture of fibre and like boards. I. J. F. Nicolas.

SPECIFICATIONS PUBLISHED.

(7½d. each. By post 8d.)

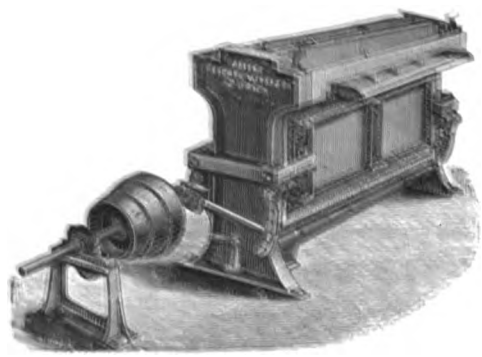
1897.

17,736. Process for producing waterproof and washable glazed paper. Schiffer.

ESCHER WYSS & Co.,

Engineers,

ZURICH, SWITZERLAND.



New Patent Strainer

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The Toronto Paper Co.'s Experience: "They are durable and easily cleaned. We have had one in use for eighteen months and it seems as good as new. Once adopted not likely to be turned out."

FEATURES—

SUPERIOR to any other System for its Numerous Advantages as:

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LATEST IMPROVEMENTS.

BUMSTED & CHANDLER,

Cannock Chase Foundry, Hednesford, Staffs.

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British Imports of Foreign Paper

FOR THE WEEK ENDING MONDAY:

	Bales.	Cases.	Rolls
AUSTRIA	6	8	—
BELGIUM	1379	62	—
DENMARK	—	—	318
FRANCE	1071	—	—
FINLAND	122	—	—
GERMANY	1770	188	137
HOLLAND	22799	22	36
ITALY	28	—	—
JAPAN	13	—	—
NORWAY	6222	73	1976
SPAIN	15	6	—
SWEDEN	15090	1	514
U.S.A.	1467	276	870

Including the Following:—

Quantity	From	Importer	Port
39 bales	Christiansand	Alsing & Co	Grangemouth
2 ,,	,,	Bott & Co	London
50 ,,	,,	Daal	,,
24 rolls	,,	E. Lloyd	,,
2 ,,	,,	Bott & Co	,,
2 bales	,,	Crabb & Co	,,
28 ,,	,,	Burnell	,,
9 ,,	,,	Becker & Wagner	,,
36 rolls	,,	Guppy	,,
13 bales	,,	Cookson & Co	,,
19 ,,	,,	C. Morgan & Co	,,
54 ,,	Christiania	Davies & Royle	,,
254 ,,	,,	Olive & Partington	,,
48 ,,	,,	W. E. Bott & Co	,,
281 ,,	,,	Alsing & Co	,,
130 ,,	,,	J. Eberstein & Co	,,
37 ,,	Danzig	Elkan & Co	,,
257 rolls	Drammen	Davies & Co	,,
157 bales	,,	Crabb & Co	,,
24 ,,	,,	F. E. Foulger	,,
6 ,,	,,	H. Hubert	,,
128 ,,	,,	Crabb & Co	,,
22 ,,	,,	J. Hamilton	,,
25 ,,	,,	Davis & Royle	,,
10 ,,	,,	Relph & Co	,,
50 ,,	,,	S. H. Holman	,,
72 rolls	,,	Olive & Co	,,
6 bales	,,	Morgan & Co	,,
29 ,,	,,	Davies & Co	,,
11 ,,	,,	Guppy & Co	,,
3 ,,	,,	Eberstein & Co	,,
57 ,,	,,	Green & Co	,,
5 ,,	,,	Brough & Co	,,
61 ,,	,,	Claydon & Co	,,
50 cases	,,	Green & Co	,,
23 ,,	,,	Foulger & Co	,,
592 bales	,,	Alsing & Co	,,
202 ,,	,,	L. Henle	,,
314 rolls	,,	Crabb & Co	,,
86 bales	Gothenburg	J. Spicer & Sons	,,
150 ,,	,,	Schenkenwald & Co	,,
343 ,,	,,	Alsing & Co	,,
115 rolls	,,	R. L. Lundgren	,,
90 ,,	,,	J. Spicer & Sons	,,
21 bales	,,	Phillips & Graves	,,
36 rolls	,,	Becker & Wagner	,,
15 bales	,,	S. H. Holman	,,
31 ,,	,,	E. Lloyd & Co	,,
29 ,,	,,	E. Saunders & Son	,,
45 ,,	,,	R. L. Lundgren	,,
207 ,,	,,	J. Eberstein	,,
20 rolls	,,	Tegner & Co	,,
18 bales	,,	L. C. Lockwood	,,
41 ,,	,,	M. Relph & Co	,,
39 ,,	Norrkoping	J. Eberstein	,,
850 ,,	,,	Skarblacka	,,
48 ,,	Stockholm	J. Eberstein	,,
30 ,,	,,	H. W. Peabody	,,
5 ,,	,,	Schenkenwald & Co	,,
4 ,,	,,	E. Saunders & Son	,,

Continental Opinion of the WORLD'S PAPER TRADE REVIEW: "I take this opportunity to speak out that your Journal has NO EQUAL of its kind in all countries.—I remain, yours faithfully, M. BEHREND. Prince Bismarck's Paper Mill, Varzin, Germany.

Exports of British Paper

FOR THE WEEK ENDING MONDAY:

FROM LONDON.

To—	Printings. Cwts.	Writings. Cwts.	Various. Cwts.
AUSTRALASIA	2903	444	902
AFRICA	265	241	167
ARGENTINE	—	31	—
BELGIUM	24	6	6
B. W. INDIES	—	43	—
BRAZIL	—	—	4
CANADA	—	14	45
CHINA	3813	77	146
CHANNEL ISLES	—	—	40
CAPE COLONY	40	12	17
EGYPT	—	—	13
FRANCE	—	155	158
GERMANY	12	8	47
GIBRALTAR	—	—	18
HOLLAND	—	5	120
INDIA	25	138	25
JAPAN	—	11	—
MALTA	—	2	20
NEW ZEALAND	634	425	504
PORTUGAL	91	62	—
RUSSIA	—	—	6
SPAIN	265	6	—
S. AMERICA	—	77	—
S. SETTLEMENTS	—	4	—
SWEDEN	—	—	36
U.S.A.	—	23	10
W. INDIES	—	—	11

FROM GLASGOW.

AUSTRALASIA	1141	333	3
BRAZIL	105	—	—
CANADA	—	62	—
CAPE COLONY	20	—	1330
CHINA	148	—	—
HOLLAND	—	—	191
INDIA	499	—	—
NEWFOUNDLAND	—	12	—
NEW ZEALAND	36	—	—
NORWAY	—	—	5

Foreign Strawboards, &c.

The following were the imports of strawboards, etc., at the ports mentioned, for the week ended Tuesday last:—

STRAWBOARDS.

660 b	Newport N.	London	13218 b	Emden	London
280 ,,	Cologne	,,	2102 ,,	Rotterdam	Liverpool
896 ,,	,,	,,	4780 ,,	,,	Manchester
1197 ,,	Rotterdam	,,	3817 ,,	,,	Bristol
100 ,,	Ghent	,,			

WOOD PULP BOARDS.

133 b	New York	London	198 b	Bergen	Leith
6 ,,	Hambro	,,	119 ,,	Gothenburg	Granton
428 ,,	,,	,,	58 ,,	Hambro	Manchester
86 ,,	New York	,,	956 ,,	Stettin	,,
20 ,,	Hambro	,,	7 ,,	Gothenburg	,,
10 c	Christiania	Hull	14 ,,	,,	Liverpool
69 b	Gothenburg	,,	72 ,,	,,	Glasgow
340 ,,	Helsingfors	,,	612 ,,	Boston	Bristol

MILLBOARDS.

4657 b	Amsterdam	Goole	7050 b	Harlingen	Hull
25 c	Rotterdam	Liverpool	6729 ,,	,,	,,

PASTEBOARDS.

800 b	Trieste	London	2 c	Rotterdam	Leith
7 ,,	Hambro	,,	621 b	New York	Liverpool
20 ,,	Rotterdam	,,			

b—bales. c—cases. r—rolls. cr—crates.

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LYONS	Rue Montesquien 96.
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Quantity	From	Importer	Port
3 cases	Antwerp	Downing and Co	New York
8 ,,	,,	Amsinck and Co	,,
59 ,,	,,	Vandergrift and Co	,,
7 ,,	,,	Bainbridge and Co	,,
100 ,,	,,	Sheldon and Co	,,
23 ,,	,,	P. Ruttmann	,,
7 ,,	Hamburg	Stone and Co	,,
8 ,,	,,	A. Kraut	,,
56 ,,	,,	Dingelstedt and Co	,,
8 ,,	,,	De Jonge and Co	,,
69 ,,	,,	Amsinck and Co	,,
2 ,,	Havre	Hoe and Co	,,
76 ,,	,,	Druckleib and Co.	,,
30 ,,	,,	Richard and Co	,,
22 ,,	London	To order	Philadelphia
4 ,,	,,	Hug & Boskowitz	New York
22 ,,	,,	Dickinson and Co	,,
2 ,,	Liverpool	Hempstead and Co	,,
7 ,,	,,	B. and O. Meyer	,,
2 ,,	,,	J. W. Gregg	Boston
46 ,,	,,	Dennison Mfg. Co	,,
18 bales	Rotterdam	Germania Imptg Co	N. York
31 cases	,,	De Jonge and Co	,,
3 ,,	,,	Eimer and Amend	,,
7 ,,	,,	Amsinck and Co	,,
2 ,,	,,	Kahn and Co	,,
1 ,,	,,	Haug and Co	,,

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MANILLAS.

187 coils	Glasgow	Train, Smith and Co	Boston
172 bales	,,	,,	,,
41 ,,	Hamburg	Salomon and Co	New York
450 coils	London	Warren and Co	Boston
221 bales	Liverpool	Butterworth and Co	,,
310 coils	,,	Dutton and Co	,,
392 bales	,,	Train, Smith and Co	,,
265 ,,	,,	Butterworth and Co	,,

RAGS.

234 bales	Antwerp	A. Kazenstein	New York
84 ,,	,,	,,	,,
18 ,,	Glasgow	Train Smith and Co	Boston
72 ,,	,,	To order	,,
26 ,,	,,	Train, Smith & Co	New York
238 ,,	Hamburg	Salomon Bros	,,
102 ,,	,,	,,	,,
33 ,,	,,	Jessup and Moore	,,
65 ,,	Hull	Lewy Bros	,,
225 ,,	Leghorn	Jessup and Moore	
71 ,,	Liverpool	A. Katzenstein	,,
33 ,,	,,	J. Pirnie	,,
69 ,,	,,	Castle and Gotheil	,,
330 ,,	,,	Train, Smith & Co	Boston
231 ,,	,,	Butterworth and Co	,,
91 ,,	,,	Holyoke Mills	,,
37 ,,	London	To order	Philadelphia
187 ,,	,,	Jessup and More	,,
355 ,,	Stettin	,,	New York

WASTE PAPERS.

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70 ,,	,,	Miller and Co	,,
30 ,,	Liverpool	Butterworth and Co	,,
367 reels	,,	To order	,,

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156 ,,	,,	F. A. Reichard	,,
18 ,,	Hamburg	Wing and Evans	,,
25 ,,	Hull	J. L. & D. S. Riker	,,
91 ,,	,,	Fuerst Bros	,,
215 ,,	Liverpool	Reed, Halliday & Co	,,
780 ,,	,,	J. L. and D. S. Riker	,,
516 ,,	,,	,,	Boston
40 ,,	,,	Reed, Halliday & Co	,,

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70 ,,	,,	Groom and Co	,,
191 ,,	,,	Holyoke Mills	,,
221 ,,	,,	Butterworth and Co	,,

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300 ,,	,,	Hill's Son & Co	,,
300 ,,	,,	,,	Boston

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32 tcs.	,,	Wing and Evans	Boston
35 cks.	,,	,,	,,
200 bgs.	,,	,,	,,
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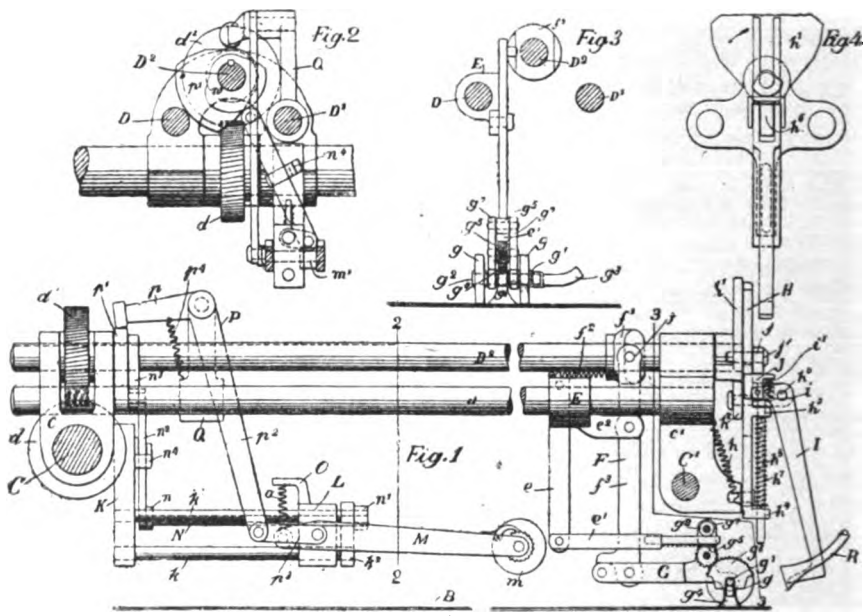
AN

Automatic Paper Feeding Machine.

The invention herewith described relates to an apparatus for separating and feeding sheets of paper to printing, folding, and other machines. Patents have been acquired in this country by Messrs. Funk and Emmerick, of New York, U.S.A. Fig. 1 is a side view of the machine, the advancing mechanism proper being shown raised away from engagement with the top sheet, and the mechanism for raising the outer edge of the top sheet being shown in the position which it occupies before the edge of the sheet is raised. Fig. 2 is a transverse section on the line 2, 2, of Fig. 1. Fig. 3 is a transverse section on the line 3, 3, of Fig. 1. Fig. 4 is a front view of the presser foot and its operating parts. Fig. 5 is a side view of the mechanism shown in Fig. 1, the paper-advancing means being shown resting upon the paper in position to advance one sheet, the edge lifting mechanism being shown in the position it assumes when the edge of the sheet is raised, and the presser foot being shown engaged with the rest of the stack of paper for holding it against movement while the top sheet is advanced; and Fig. 6 is a top plan view of the mechanism shown in Fig. 5, the presser foot and its support being removed to show more clearly the edge raising device. In the accompanying drawings we have not shown the complete machine, but only such parts as are necessary to illustrate the operation.



The table is denoted by A (Fig. 5), and upon it rests a stack of sheets of paper B. The main drive shaft is denoted by C, and extends transversely to the movement of the paper. Upon this drive shaft is mounted a suitable supporting bracket *c*. A supporting shaft C^1 extends across the machine transversely to the movement of the sheets of paper near the front of the machine, and upon it is secured a suitable supporting bracket c^1. These supporting brackets *c* and c^1 are connected by two lower bars D D^1, and a rotary shaft D^2 is also mounted at its ends in the said brackets *c* c^1. This rotary shaft D^2 derives its motion from the main drive shaft C through suitable connecting gear *d* d^1.

The mechanism for raising the outer edge of the top sheet of paper, and holding the rest of the stack of paper in position after said edge has been raised, so that the top sheet may be advanced or fed into another machine, without disturbing the stack, acts as follows:—A collar E is secured to one of the bars D, D^1, in the present instance, the bar D near the bracket *c*. Depending from the collar E, and secured rigidly thereto, is a bar *e*, to the free end of which is pivoted a rack bar e^1, which extends forwardly into position to engage a pinion to be hereafter described. A rocking lever P is pivoted to a forwardly extended arm e^2 of the collar E, its arm *f* being engaged by a cam f^1 on the rotary shaft D, whereby the lever F is rocked. The arm *f* is held in engagement with the cam f^1, preferably by means of a coil spring f^2 extending between the arm and the collar E. The lower arm f^3 of the lever F ex-

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tends down into proximity to the stack of paper B, and to its end is pivoted a carriage G. This carriage G has mounted in its forwardly extended end a pair of rollers g. These rollers g are mounted on a hollow shaft g^1, which is closed at one end (g^2, for instance), and at its opposite end there is secured an air exhaust tube g^3, which extends to a suitable exhaust pump, not shown. Between the rollers g, which are adapted to rest upon and roll along the top sheet of the stack of paper B, is mounted a suitable suction cup g^4, which is connected with the hollow shaft g^1. This suction cup g^4 rests with its open mouth in engagement with the top sheet of paper when the parts are in the position shown in Fig. 1, so that when air is being exhausted, the cup will cause the top sheet to firmly adhere thereto. The cup g^4 is caused to positively roll the outer edge of the top sheet of paper upwardly by means of a pinion g^5, mounted on the carriage G, which meshes with the rack e^1, and also with the segment g^6 of the hollow shaft g^1. The carriage G may be extended upwardly to form ears g^7, between which may be mounted a suitable anti-friction roller g^8, which travels along the top of the rack e^1 for holding it positively in engagement with the pinion g^5.

The mechanism for holding the balance of the stack firmly after the edge of the top sheet is raised is as follows:—A plate H is secured to the front of the bracket c^1, and to the end of the shaft D^2, in sliding adjustment, and is held normally at the limit of its upward movement by means of a retracting spring h, which preferably extends from a portion of the bracket c^1 to the lower end of the said plate H. This plate is depressed against the tension of the spring h by means of an eccentric h^1 secured to the shaft D^2, which engages an anti-friction roller h^2 on the said plate. The plate H is provided with forwardly-extended lugs h^3, h^4, and through them is extended a rod h^5. This rod h^5 is provided at its upper end, above the projection h^3, with a head h^6, to which is pivoted the presser foot I. This head, and thereby the presser foot I, is yieldingly held at the limit of its downward movement relatively to the plate H, by an extension spring h^7, which extends between an abutment on the rod h^5 and the upper lug h^3.

The upper end of the presser foot is preferably bifurcated, and is extended inwardly beyond its pivoted point h^8, to form arms i. The free ends of these arms i are secured to hood J, which has a limited sliding movement along the plate H. An extension spring i^1 is mounted in a socket in the head h^6, and bears against the hood J, tending to force it upwardly, and thereby rock the lower end of the presser foot I inwardly over the stack of paper. An eccentric j is mounted on the shaft D^2, in the present instance, on a pin j^1 extending into the end of the said shaft, which eccentric is in position to engage the hood J and depress it at the proper time to swing the lower end of the presser I out away from the stack of paper B, to allow the paper edge raising mechanism to operate freely, without interfering with the end of the presser foot. The eccentrics h^1 and j are so timed that the presser foot I is swung inwardly, and then forced downwardly on to the stack of paper when the top sheet has been curled or rolled up at its edge. The presser foot I will yieldingly hold the stack B against movement, because of the sliding movement of the rod h^5 and

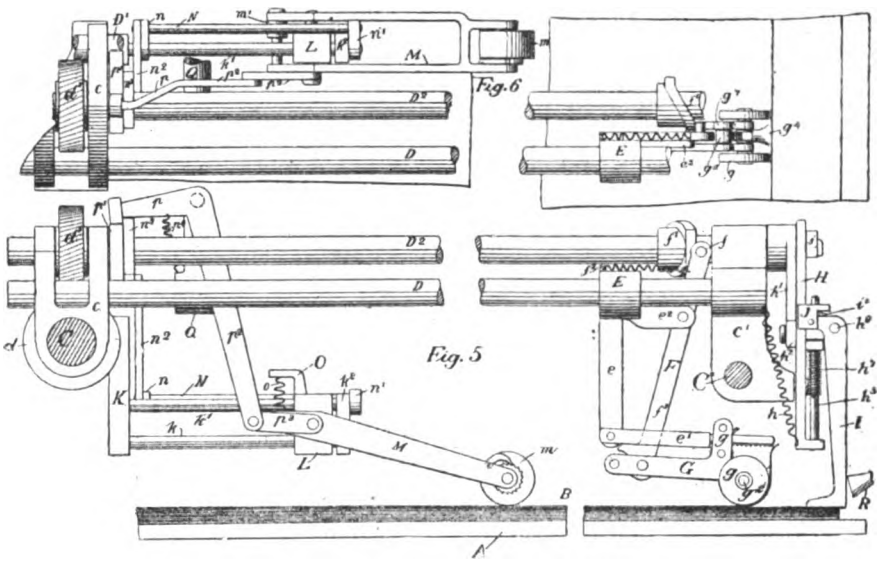

Fig. 6

Fig. 5

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the yielding of the spring h^7, as will be seen in Fig. 5.

Proceeding to describe the advancing means proper, and the mechanism for operating it, the inventors say:—

Depending from the bracket *c*, and secured rigidly thereto, is a plate K. Two rods k k^1 extend forwardly, and their free ends are connected by a suitable plate k^2. Mounted on the bars k k^1 is a sliding block L, to which is pivoted a rock lever M, which carries at its forward end a paper-advancing roller m. This roller m is adapted to be swung towards and away from the stack of paper B, and has a pawl and ratchet connection with the lever M, so that it is held against rotating when drawn backwardly along the stack, but is free to rotate when advanced. This roller m may be of any desired gripping material, or may be simply surfaced with gripping material, as found more desirable. The roller m is raised and lowered in the following manner:—A guide bar N is connected at its opposite ends to the upper rod k^1 by suitable swinging arms n, n^1, whereby the guide bar is free to swing up and down with the said rod k^1 as a pivot. To the inner end of the guide bar N is secured the lower end of a sliding dog n^2, the upper end of the dog being engaged by an eccentric n^3 on the shaft D^2. The sliding dog n^2 rests, intermediate its ends, in a suitable guide n^4 on the bracket *c*. The lever M is preferably of double bifurcated form, as shown, and is pivoted on both sides of the sliding block L. Between its ends opposite from those which support the roller m, we mount a roller m^1, which engages with the guide bar N, and is adapted to travel along the same as the travelling block L slides along the rods k k^1. If the weight of the roller m and the forwardly extended arm of the lever M is not sufficient to hold the roller m^1 pressed against the guide bar N, and thereby hold the upper end of the sliding dog n^2 against its eccentric n^3, a retracting spring o is extended from a bracket O on the block L down into engagement with the rearwardly extended arm of the lever N. It will thus be seen that, as the eccentric depresses the sliding dog n^2, the guide bar N will be swung downwardly, thereby swinging the roller m away from its contact with the sheet of paper. The block L, together with the lever M which it supports, is moved forwardly and backwardly along the bars k, k^1, in the following manner:—A two-armed rocking lever P is pivoted to the upper end of a support Q, secured to the rod D^1. The rearwardly extended arm p engages with an eccentric p^1 upon the rotary shaft D^2, and the downwardly extended arm p^2 of the two-armed lever P is connected with the lever M and block L by a suitable link p^3. The free end of the arm p is held against the surface of the eccentric p^1 by means of a retracting spring p^4, which extends from the support Q to the said arm p. This spring p^4 also serves to return the paper advancing parts to the limit of their forward movement away from the advance edge of the sheet of paper. The excentrics n^3 and p^1 are so timed with respect to each other, that when the roller m is in its gripping position upon the surface of the paper, the eccentric p^1 will immediately begin to advance the roller m, thereby advancing the top sheet of paper, and after the paper has been advanced the proper distance, the eccentric n^3 will raise the roller m from the paper and keep it so raised while the roller m is returning to its first position. There are preferably two of these advancing mechanisms complete, as above described, located one near one side of the stack of paper, and the other near the other side of the stack of paper, but, if so desired, one or more of these advancing means may be used.

A steady blast of air against the forward edges of the paper may be used for still further tending to separate the edges of the sheets of paper, and after the edge of the top sheet has been raised, to still further separate that sheet from the remaining sheets of the stack; which blast may also be used for drying the ink if the sheets of paper have been printed, and are being fed to a folding machine. We have shown, in the accompanying drawings, the position of the nozzle of such an air blast, and have lettered it R. This blast of air, however, is not essential to operate the device.

Supposing the parts to be in the position shown in Fig. 1 of the drawings, and supposing that the air has begun to be exhausted through the cup g^4, the rotation of the shaft O will rotate the shaft D^2, thereby swinging the carriage G rearwardly, and curling up the other edge of the top sheet of paper. When this has been accomplished, the presser foot I is operated, the first part of the movement being to swing the presser foot into position over the rest of the stack of paper, and the further movement being to bring the presser foot firmly down on to said stack. The roller m is then brought down into gripping contact with the surface of the upper sheet of paper; the exhausting of air through the cup g^4 is stopped, allowing the sheet to free itself from said cup. The advancing mechanism is then further operated by the further rotation of the shaft D^2 drawing the roller m along the stack of paper, and advancing the top sheet towards the machine to which it is to be fed. When it has advanced it the proper distance, all the parts return to the position shown in Fig. 1 of the drawings.

The device as described, it is claimed, entirely does away with the tendency to feed more than one sheet of paper, and also prevents the rest of the stack of paper from being disarranged while the top sheet is being advanced. The table A may be gradually raised as the sheets of paper are fed from the stack, so as to keep the top sheet in position to be engaged by the mechanism, by any suitable operating means.

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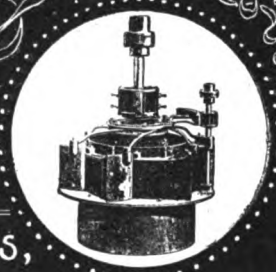

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THE SATINITE CO., WEST BANK, WIDNES.

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General Notes.

A handsomely got up large quarto book has been issued to the trade by Messrs. John Greig and Sons, Fountain House Works, Edinburgh. It is a complete catalogue of the machines, presses, and appliances for the paper, printing, bookbinding, stationery, boxmaking, and allied trades, and contains interesting particulars of the various machines, which are fully illustrated. Messrs. Greig are strong in the manufacture of paper cutting machines, and here describe their well-known improved "Conqueror" self-clamp guillotine in its various sizes, as well as the "Edina" screw clamp, and side lever cutting machines, together with guillotine accessories, and knife sharpening appliances of a most useful character. Rotary card and millboard cutters, lever card and millboard cutters, punching machines of the latest designs, card, label, and envelope cutters are shown and described, as well as special machinery for the making of plain and fancy boxes, lithographic and copperplate presses for hand and steam power, and litho and letterpress machines, with a host of other appliances figure in the book, which should be in the hands of every printer. The machines turned out from Fountainbridge Works are in use all over the world, and are well known to British Colonists for their superior workmanship and dependability. The firm are ironfounders, as well as engineers, producing their own castings, so that the quality of the metal is under their own control, and perfect castings of sound iron are thus secured which greatly contribute to the strength and durability of their machines, and this, in connection with the great personal care exercised in the close supervision of all stages of manufacture, has earned for them the favourable reputation that they have so long enjoyed.

THE CHINAMAN AS A MAN OF BUSINESS.—A recent consular report on the business habits of the Chinaman states that he "is as honourable in mercantile affairs as his colleagues in Christian lands. The great merchants are the soul of honour, and foreigners prefer transacting business with them. The native sometimes makes contracts with foreigners which subsequent events prove will be disastrous, yet he fulfils his part. Fraudulent failures are never known. The merchant cannot make over his property to his wife, for in the event of failure, his whole family must aid in settling with the creditors. The son is responsible for the debts of his father, and *vice versa*; and where, as is often the case, the family estates have not been divided, but held in common, the whole family is responsible for the debt of its members. In China debts can hardly be classified as debts of honour and legal debts. Although all debts may not be legal, they are all, in the eyes of the Chinese, debts of honour. For a Chinese not to pay his debts is a disgrace felt so keenly that he will commit suicide rather than face the reproaches of his friends. The rich do not contract debts unless they are reasonably sure that they can pay, for in the event of failure they would lose respect, and the possibility of a suicide's grave stares them in the face. The poor do not contract debts because credit is not accorded them; they must pay cash down."

Company Registrations.

G. F. RENWICK, Ltd.

Registered with a capital of £2,000 in £1 shares, to carry on the business of the printing and publishing of the *Nelson Free Press*, and as printers and publishers generally. Table A mainly applies.

"WHEELS" PRESS, Ltd.

Registered with a capital of £10,000 in £1 shares, to carry on the business of newspaper and magazine proprietors, printers, publishers, booksellers, advertising agents, etc. The first directors—to be not less than three nor more than five—are O. H. Beatty, C. W. Brown, W. L. Grelinger, and F. J. Maclean. Qualification, £100. Remuneration, £50 each per annum and £65 for the chairman.

JACOBSEN, WELCH and CO., Ltd.

Registered with a capital of £10,000, in £1 shares, to adopt an agreement with T. O. Jacobsen and S. Welch, for the acquisition of the business carried on at 80, Milton-street, E.C., as Jacobsen, Welch and Co., and to carry on the business of manufacturing stationers, book and picture dealers, printers, publishers, etc. The first directors—to number not less than two nor more than five—are T. O. Jacobsen, S. Welch (managing directors with £105 each per annum), and E. T. Fowler. Qualification, £100.

"MOONSHINE," Ltd.

Registered with a capital of £2,000, in £1 shares, to acquire the assets of a company of the same name, and to carry on an undescribed business. Table A mainly applies.

"YORKSHIRE WEEKLY" CO., Ltd.

Registered with a capital of £100 in £1 shares, to carry on the general business of printers and publishers. Registered without articles of association.

THE SCOTTISH BEEKEEPER PUBLICATION CO., Ltd.

Registered with a capital of £250 in 10s. shares, to carry on a publication devoted to the interests of beekeepers, etc., in Scotland.

PRESS UNION, Ltd.

Registered with a capital of £100, in £1 shares, to carry on the business of advertising agents and newspaper proprietors.

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	Cm.	Inches	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.	Mark	£	s.
A B	50	19½	425	21	5	550	27	10	150	7	10	100	5	0	80	4	0
A Ba	55	21½	485	24	5	610	30	10	160	8	0	105	5	5	80	4	0
A C	60	23½	575	28	15	700	35	0	175	8	15	110	5	10	85	4	5
A Ca	65	25½	650	32	10	775	38	15	185	9	5	115	5	15	85	4	5
A D	71	28	740	37	0	865	43	5	200	10	0	120	6	0	90	4	10
A Da	76	30	825	41	5	950	47	10	220	11	0	125	6	5	90	4	10
A E	83	32½	950	47	10	1,075	53	15	240	12	0	125	6	5	95	4	15
A Ea	91	35½	1,050	52	10	1,175	58	15	250	12	10	130	6	10	95	4	15
A F	95	37½	1,150	57	10	1,275	63	15	260	13	0	135	6	15	100	5	0
A Fa	100	39½	1,250	62	10	1,375	68	15	280	14	0	140	7	0	100	5	0
A G	108	42	1,400	70	0	1,525	76	5	315	15	15	145	7	5	105	5	5
A Ga	113	44½	1,500	75	0	1,625	81	5	325	16	5	150	7	10	105	5	5
A H	120	47½	1,600	80	0	1,725	86	5	340	17	0	155	7	15	110	5	10
A Ha	140	55	1,950	97	10	2,075	103	5	365	18	5	160	8	0	115	5	15
A I	160	63	2,275	113	15	2,400	120	0	390	19	0	160	8	0	120	6	0
A Z	210	82½	—	—		4,900	245	0	500	25	0	200	10	0	—	—	

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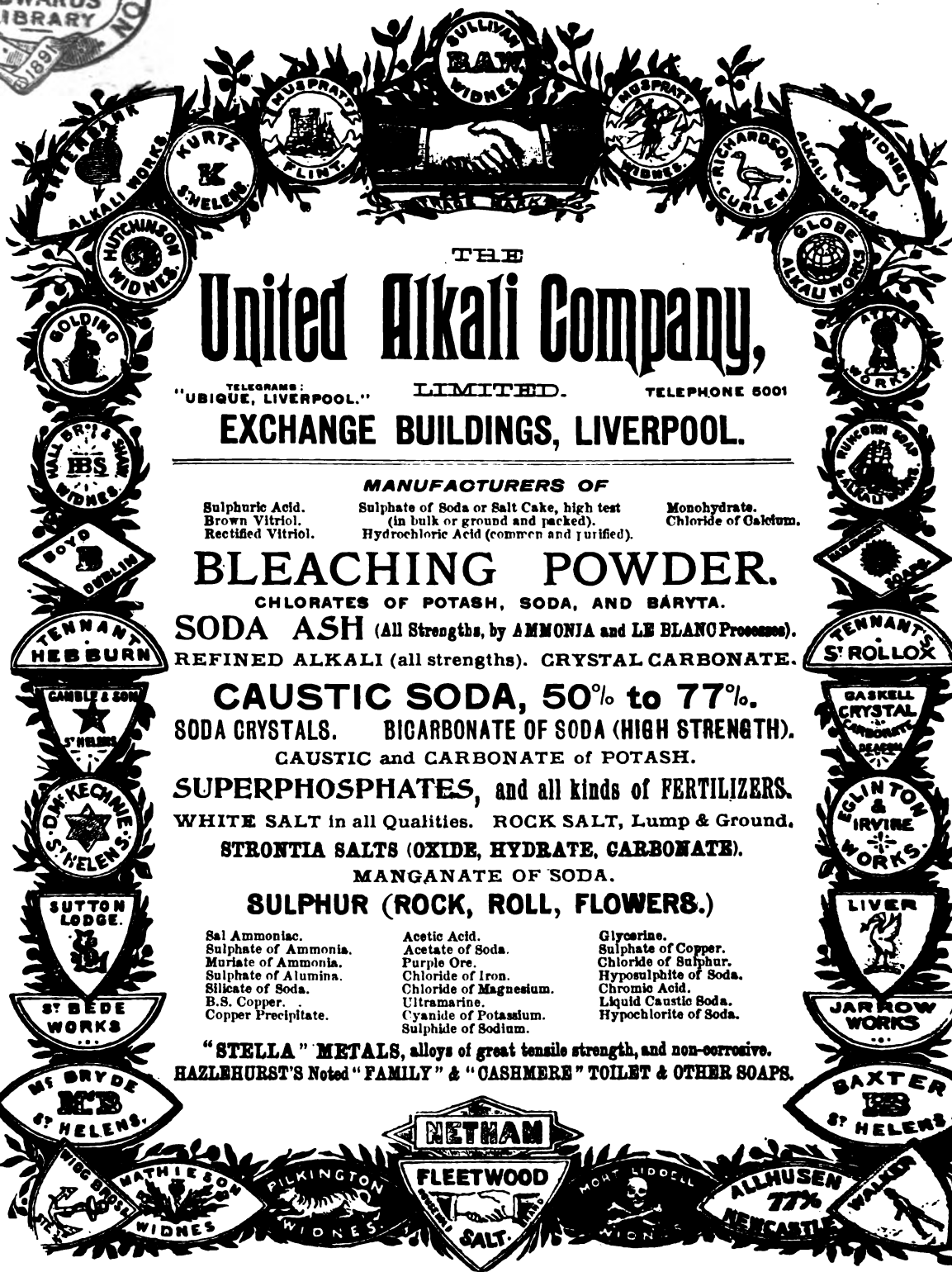

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EXCHANGE BUILDINGS, LIVERPOOL.

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Sulphuric Acid.
Brown Vitriol.
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Sulphate of Soda or Salt Cake, high test (in bulk or ground and packed).
Hydrochloric Acid (common and purified).

Monohydrate.
Chloride of Calcium.

BLEACHING POWDER.

CHLORATES OF POTASH, SODA, AND BARYTA.

SODA ASH (All Strengths, by AMMONIA and LE BLANC Processes).

REFINED ALKALI (all strengths). CRYSTAL CARBONATE.

CAUSTIC SODA, 50% to 77%.

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WHITE SALT in all Qualities. ROCK SALT, Lump & Ground.

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Muriate of Ammonia.
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B.S. Copper.
Copper Precipitate.

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Purple Ore.
Chloride of Iron.
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Ultramarine.
Cyanide of Potassium.
Sulphide of Sodium.

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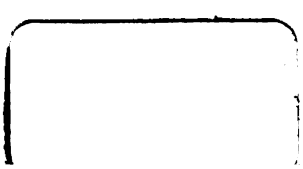

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